MIETE

MASTER IN INNOVATION AND TECHNOLOGICAL ENTREPRENEURSHIP

Examining Marketing Challenges of Portuguese Start-ups: An Organizational Life Cycle Approach

Richard-Mikael Ancuta

Dissertation

Supervisor in FEUP: Prof. Gabriela Beirão

Universidade do Porto
Faculdade de Engenharia
FEUP

Faculdade de Engenharia da Universidade do Porto

2016-07-29

Examining Marketing Challenges of Portuguese Start-ups: An Organizational Life Cycle Approach

Abstract

This cross-sectional study aimed at examining which marketing challenges to expect in the different stages of firm development. Marketing in newly founded firms, such as start-ups has shown to be a very important subject for stimulating firm growth and success. However, due to their smallness, newness, and uncertain and turbulent environment, marketing becomes a difficult discipline for these firms resulting in various marketing challenges. Using two concepts from the literature on development and change in organizations and entrepreneurial marketing, this study adapted an organizational life cycle approach as a diagnostic tool in analyzing current stages of growth, and investigated where various marketing challenges identified from the literature, occurred relatively to the growth stages. Through categorization techniques this study compared different groups of the sample based on various criteria. The data for this study was collect thorough a self-categorization questionnaire which was developed for the purpose of this study, and was sent by email to 287 Portuguese startups in Porto and Lisbon. The results from this study were obtained from a sample of n=20, limiting its generalizability and validity. The results show that marketing challenges are present in all stages of firm growth, but with variability in degree of challenge, mostly of "somewhat of a challenge". However, marketing challenges show to become more of a challenge in the second stage of development, regardless of whether incubated or not. Furthermore, start-ups serving the domestic market rate marketing challenges higher in general than start-ups serving international markets, and start-ups utilizing one source of finance tend to rate marketing challenges much higher than start-ups utilizing more than one source of finance. Regarding size and age, start-ups in their early stages of development are heterogeneous, and so they might not grow equally.

List of content

List of figures

List of tables

1 An introduction to the study

This study sought to identify *"which marketing challenges to expect in different stages of firm development"*. The study was initiated based on the future direction of research within marketing in new ventures suggested by Gruber (2004: 192), which still seems to be a gap in the literature. This approach requires an understanding of two important concepts introduced in the literature, mainly development and change in organizations, and entrepreneurial-marketing.

Development and change in organizations can be explained through many commonly used theories introduced in the management literature such as life cycle, teleology, dialectic, and evolution (Van de Ven and Poole, 1995). Each of these theories can be used to explain how change events progresses through a series of separate sequences. This study adapts the life cycle perspective which views the development of organizations from their initiation to their termination (or maturity) through a linear growth model. Such perspective becomes relevant for this study on many grounds. First of all, it is probably the most common explanation of development in the management literature (Van de Ven and Poole, 1995) as it reduces a complex process, into *"a uniform, familiar, appealing, predictable and deterministic pattern"* (Stubbart and Smalley, 1999: 274). Secondly, it has been suggested that there is a need to recognize the importance of business life cycles to entrepreneurship (Gilmore, Carson and Grant, 2001; Hite and Hesterly, 2001). Thirdly, it is consistent with the findings of many studies (e.g. Mintzberg and Waters, 1982), who through historical review found that small, personalized, highly flexible (but economically vulnerable), knowledge-based firms, like startups, transform themselves into larger firms, and that firms will continue to grow, bureaucratize, and centralize (Child, 1972). Last but not least, since the organizational life cycle segments the developmental process into stages or periods of time (Smith, Mitchell, and Summer, 1985), it becomes relevant for this research approach as the life cycle model is *"a diagnostic tool to assist in analyzing a firm's present situation"* (Scott and Bruce, 1987: 51).

Rather than explaining change over a period of time which most of the literature on organizational life cycle have sought to do (e.g. Steinmetz, 1969; Greiner, 1972; Lewis and Churchill, 1983; Miller and Friesen, 1983; 1984; Scott and Bruce, 1987; Smith et al. 1985; Kazanjian, 1988; Hanks, Watson, Jansen, and Chandler 1993; Dodge and Robbins, 1992), this study uses the life cycle model as a diagnostic tool, to analyze start-ups current stage of growth. Since most studies concerned with organizations, have concentrated on large organizations as legal entities (McKelvey and Aldrich, 1983), the adaption of the life cycle model to start-ups is of interest, mainly because studies (Kazanjian, 1988; Dodge and Robbins, 1992; Lewis and Churchill, 1983; Shim, Eastlick, and Lotz, 2000) found marketing problems to be prevail during the early stages of development for these firms, which must be dealt with, if these firms are to be able to manage the growth process (Boag, 1987; Carsons, 1985; Tyebjee, Bruno and McIntyre, 1983). Thus, marketing in small, emerging, newly founded, and entrepreneurial firms such as start-ups, is an important subject for stimulating firm growth and success (Gruber, 2004).

Furthermore, Van Gelderen, Thurik and Bosma (2005) argue that people concerned with promoting or starting a business, are interested in knowing about what can conceivably help in achieving success (or failure) in the start-up stages. Using a life cycle model can be a great assessment to founder(s) of new firms, as it can serve as a road map to identify marketing challenges during different developmental stages, and so, they can prepare for and ultimately prevent them from occurring (Hanks et al. 1993).

2 Literature review

We commence this study by reviewing some of the literature on organizational life cycle also referred to as business life cycle, firm life cycle or corporate life cycle. These are terms we will use interchangeably throughout this study. Furthermore, in the literature there have been great efforts to distinguish, small businesses, small firms etc., from start-ups, new ventures, entrepreneurial firms, just to mention a few. For the purpose of this study, we use these terms interchangeably although it can be argued that each term has different meanings.

2.1 Introducing organizational life cycle

Generally speaking, a life cycle is *"understood to be a series of events or stages in a process, the cyclical nature of which means they will be repeated... Although a circular model of lifecycle is most common, linear versions are also used"* (Moira, 2016: 32). According to Penrose, (1995 in Garnsey, Stam, and Heffernan, 2006: 4) firm growth is then *"(...) a result of a process of development (...) in which an interacting series of internal changes leads to increases in size accompanied by changes in the characteristics of the growing object"*. In organizational life cycle theory, growth is built around the concept of a linear process, in order to make it tractable (Garnsey et al. 2006). This is usually depicted in an organizational life cycle model (Figure 1). The organizational life cycle model suggests that firms grow, age and change strategies as they move through a number of systematic sequences of stages.

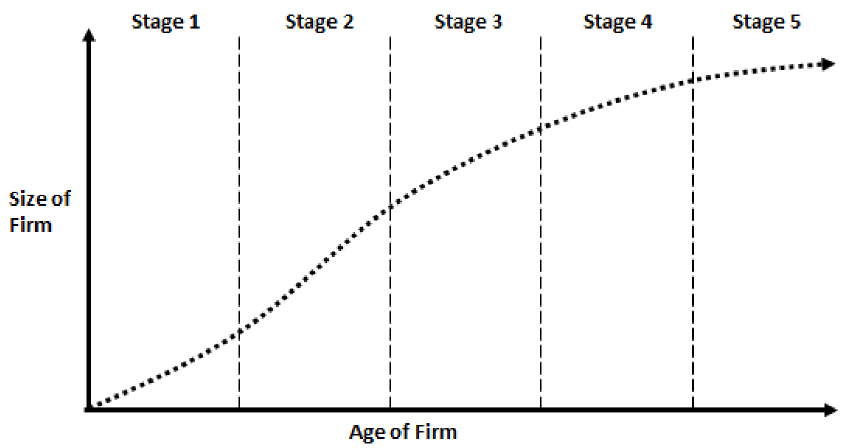


Figure 1: Example of Organizational Life Cycle model

Each stage represents a specific period which is characterized by particular arrangements of contextual, strategic and/or structural activities within the firm (Hanks, 2015; Dodge, Fullerton, and Robbins, 1994; Hanks et al. 1993; Quinn and Cameron, 1983; Lester, Parnell, and Carraher, 2003), which according to these models, become inappropriate as the firm grows, causing a transformation in the structure (Ranson, Hinning, and Greenwood, 1989).

There have been great attempts to predict the amount of growth stages, however it is still unclear to conclude the exact amount of stages and what comprise a stage. As a consequence, the outcome of the vast studies on firm life cycle has resulted in a great number of different models such as industry growth models, large business growth models, small business growth models, and general growth models (Scott and Bruce, 1987), which each is characterized by numerous stages ranging from three to ten (Lewis and Churchill, 1983). Some of these models can be obtained from table 1 below, which shows the amount of stages, the name of each growth stages for the given model proposed by each author, and for what type of firm the model is based on.

Table 1: Summary of growth models, stages, and firm type

		Name of each life cycle stage				
Author(s)	**Type of firm**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Stage 5**
Lester et al. (2003)	Small + Large	Existence	Survival	Success	Renewal	Decline
Lewis and Churchill, (1983)	Small	Existence	Survival	Success	Take-off	Resource Maturity
Miller and Friesen, (1983; 1984)	Large	Birth	Growth	Maturity	Revival	Decline
Scott and Bruce, (1987)	Small	Inception	Survival	Growth	Expansion	Maturity
Hanks et al. (1993)	High-tech	Start-up stage	Expansion	Consolidation	Diversification	Decline
Greiner, (1972)	General	Creativity	Direction	Delegation	Coordination	Collaboration
Kazanjian, (1988)	Technology-based new venture	Conception and Developme nt	Commerciali -zation	Growth	Stability	
Dodge and Robbins, (1992)	Small	Formation	Early growth	Later growth	Stability	
Smith et al. (1985)	Large	Inception	High growth	Maturity		
Steinmetz, (1969)	Large	Inception	High growth	Maturity		

2.2 The life cycle assumptions

The life cycle perspective assumes that growth is "*linear, sequential, deterministic and invariant"* (Phelps, Adams, and Bessant, 2007: 2). They tend to view the growth patterns of firms in an orderly and predictable way (Lewis and Churchill, 1983; Kazanjian, 1988) from their inception to maturity (or decline) as they undergo structural reconfigurations through a series of stages. Each of these stages is a distinct time period which is distinguished from one another by change in structures (Hanks et al. 1993). A number of particular alterations are expected to occur as the organization from young, small, and simple, develop into an older, larger and more complex organization. As these transformations occur, the firm enters the next structure and growth stage, where this procedure reoccur (Lewis and Churchill, 1983; Greiner, 1972). It is important to note, that these models explain how firms *"adapts internally in order to continue its growth"* and not what causes the firm to grow (Dobbs and Hamilton, 2007: 298).

The management literature present stages in different ways, but the models are valuable as *"empirical generalization that provides evidence on the early life of the firm"* (Garnsey, 1998: 529). Furthermore, these models have been used as approaches for building typologies of firms in relation to their structures (Mintzberg, 1980), and so, each life cycle stage can be verified by clustering the firms along the contextual and structural dimensions (Miller, 1984, in: Hanks, 2015).

2.3 Contextual dimensions

Some of the most common contextual dimensions are size and age (Hanks et al. 1993), which have shown in the literature to be relevant descriptor of life cycle stages. In fact all life cycle models use age and size as contextual dimensions (Lewis and Churchill, 1983; Greiner, 1972; Kazanjian, 1988; Miller and Freisen, 1983; 1984; Quinn and Cameron, 1983; Scott and Bruce, 1987; Smith et al. 1985) as descriptor for life cycle stage. Age represent the life span of the organization, and is usually portrayed on the horizontal axis in a life cycle model, while size is depicted on the vertical axis (Greiner, 1972). The most common means used in the business life cycle literature to measure size of the organization is either or all together, in terms of sales volume, number of employees (Scott and Bruce, 1987; Greiner, 1972; Lewis and Churchill, 1983; Smith et al. 1985), total assets (Scott and Bruce, 1987), type of customer, and capital requirements (Ibrahim and Goodwin, 1986).

2.4 Structural dimensions

In addition to contextual dimensions, each life cycle stage in any life cycle model relies on some measure of structural characteristics to describe each of the stages of development (Lester et al. 2003). The literature has offered a great variety of models, which all vary according to stages and structural dimensions. For instance, Pugh, Hickson and Hinings, (1969) identified structuring of activities, standardization of routines, formalization of procedures, specialization of roles; concentration of authority, centralization of authority, and control of workflow to be associated with structural dimensions. While other structural dimensions according to Hanks et al. (2003) are; structural form, formalization, centralization, vertical differentiation, and number of organization levels. Miller and Friesen, (1983; 1984) found five dimensions concerning changes over the life cycle in: strategy, structure, decision-making methods, organizational situation, and management style while Lewis and Churchill, (1983) described five management factors such as; managerial style, organization structure, extent of formal systems, major strategic goals, and owner’s involvement in the businesses.

2.5 Selecting an appropriate model

According to Hanks, (1990) the amount of stages a life cycle model consists of, is very dependent on how the researcher defines a life cycle stage. Each life cycle model is unique with respect to structural dimensions, and because each model is an attempt to predict growth stages for different firm types (small vs. large) some of them become inappropriate to use for the aim of this study. According to Stubbart and Smaley (1999: 280), all stage models do not have to be *“painted with the same brush”* even though they share similarities. Therefore, we will discuss some of these models in order to select an appropriate one.

Among researchers who have introduced models applicable to firms regardless of size are to be mentioned Greiner (1972) and Lester et al. (2003). However, Dodge et al. (1994) argue that it is difficult to apply a universal model to all types of firms. The problem of such “general” models is that it becomes inadequate to use as it lacks representation of the various sub-stages that specifically small businesses such as start-ups encounter. Other researchers (Kimberly, Kimberly and Miles, 1980; Quinn and Cameron, 1983; Hanks et al. 1993; Miller and Friesen, 1984; Smith et al. 1985) have proposed models for large organizations, while other researchers (Lewis and Churchill, 1983; Steinmetz, 1969; Scott and Bruce, 1987) have proposed models for small organizations, and more notably, Kazanjian, (1988) who proposed a model for technology-based new ventures. From this perspective, adapting a life cycle model applicable to small or new ventures is more essential due to the characteristics of start-ups.

What is known from most literature on organizational life cycle is that these models appear to share four general stages which are; 1) a startup/entrepreneurial stage, 2) a growth stage, 3) an expansion stage, and 4) a stability stage (Dodge and Robbins, 1992). Also Hanks, (2015) and Quinn and Cameron, (1983) found most life cycle models to have commonalities with regards to both dimensions and stages.

Another aspect that should be considered when selecting a model is the fact that some life cycle models include a decline stage. Even though some researchers (Hanks, 1990; Miller and Friesen, 1983; 1984; Jawahar and McLaughlin, 2001) found support for the decline stage, other researchers (Chandler, 1962; Kanzanjian, 1988; Quinn and Cameron, 1983) introduced some four-stage models, in which they disposed the decline stage. Similarly, Garnsey (1998) argue that the later stages in the life cycle are not universal, even though they have shown to be present in the minority of firms.

The arguments underlying the disposal of the decline stage can be found in Drazin and Kazanjian (1990). According to them it is irrelevant to include, as a firm may shift from a lower stage directly into the decline stage, which in fact is a violation of the assumption that growth is linear, sequential, deterministic and invariant (Phelps et al. 2007).

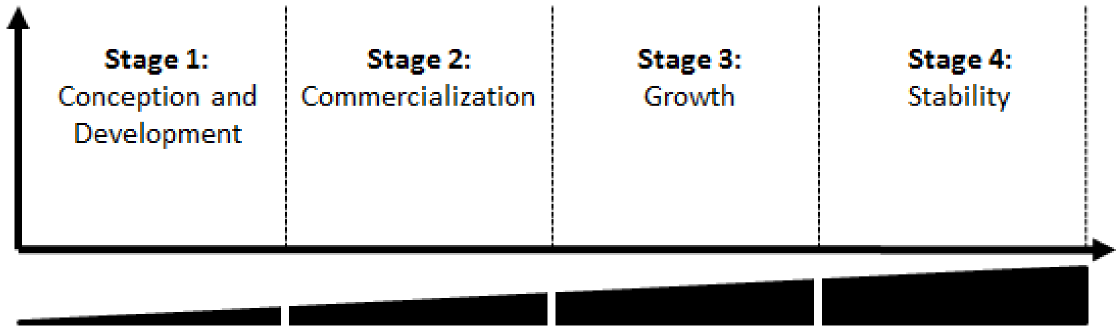
Garnsey’s (1998) argument is that a large number of firms in fact persist in staying small (usually in niche markets), in which he refers to these types of firms as lifestyle companies. Also Lester et al. (2003) present a probable reason for discarding the decline stage, based on the assumption that start-ups have not yet experienced such situation, due to their youthfulness unlike larger organizations that have been in the market for a much longer period. Even though Miller and Friesen (1984) included a decline stage as the final stage in their model, they found in their longitudinal study of well-known firms (e.g. Ford and Volkswagenwerk) that these firms encountered periods of decline without necessarily going out of business.

According to Kimberly et al. (1980) firms may have a life cycle which includes decline and termination, but it is important to remember that firms can take actions which extend their lives such as acquiring finance, starting new marketing campaigns, or even opening new markets (Hall, 1996). Looking at one of few studies actually considering new ventures such as start-ups, attention should be drawn to Kazanjian (1988) whose model was developed on the foundation of technology based-new ventures. Through a case study approach in assessing dominant problems to stages of growth, he identified four stages, namely; 1) Conception and Development, 2) Commercialization, 3) Growth, and 4) Stability. More importantly, Tyebjee et al. (1983) who used the development process and evolution concept to illustrate how changes in marketing activity developed alongside company growth also identified four different stages. Adapting the model of Kazanjian (1988), the following section sought to explain the characteristics of each stage. Unlike, most studies on life cycle models which try to capture the life span of the firm our approach is more concerned with their current/present stage of the firms. Thus we can discard the decline stage as we are not concerned with startups that have already vanished.

2.6 The life cycle stages

A general developmental model is usually presented as a series of historical observations of a continuous process, and *"growth models imply that change processes are largely deterministic and internally programmed"* (Stubbart and Smalley, 1999: 274). Start-ups like other type of firms are specified by *"independence of action, differing organizational structures, and varied management styles"* (Lewis and Churchill, 1983: 1).

Figure 2**,** below is a summary of the four sequential stages of the life cycle by Kazanjian (1988). Each stage in the matrix is characterized by some different characteristics commonly repeated in the literature, in association with indicators.



Primary focus:	Invention and development of product	Preparing product for commercialization	Securing adequate selling capacity	Second generation products, Maintain growth momentum
Organizational structure:	Simple, very informal, personal, Unstructured	Simple, informal, functional and centralized, some formalization	Formalized, moderately centralized, functional	Standardized and formalized, functional, decentralized
Management style:	Individualistic, entrepreneurial, dominated by owners	Entrepreneurial, administrative directive, supervised,	Entrepreneurial, co-ordinate, delegate,	Professional, administrative,
Major source of finance:	Owners, friends and relatives	Owners, suppliers, banks	Banks, retained earnings	Retained earnings, secured long-term debt
Literature:	Hanks et al, 1993; Lewis and Churchill, 1983; Greiner, 1972; Miller and Friesen, 1983; 1984; Scott and Bruce, 1987; Kazanjian, 1988; Dodge and Robbins, 1992; Tushman, 1982			

Figure 2: Sequential stages and their characteristics

STAGE 1 – CONCEPTION AND DEVELOPMENT

According to Van Gelderen et al. (2005) the birth of a firm is evidence of its first success. The Conception and Development stage (or Start-up stage, Inception stage, Formation stage, Birth stage, Existence stage) is devoted towards the invention and the development of the product, technology or service (Kazanjian, 1988; Block and MacMillian, 1985; Miller and Friesen, 1984; Scott and Bruce, 1987). At this stage the start-up is new and young, with few employees whose task assignments are very general, and the firm's growth rate is uncertain (Hanks, 2015). The management style within the organization at this stage is entrepreneurial, individualistic, and unstructured (Scott and Bruce, 1987; Hanks, 2015), thus no structure or formality exists as the venture is primarily directed by the found entrepreneur(s), who performs all the important tasks and directly supervises subordinates (Lewis and Churchill, 1983; Lester et al. 2003; Hanks, 2015). The firm at this point has no (or scarce) capital resource and very limited skills, thus the founders are heavily dependent on their own personal skills and their unique product or service (Steinmetz, 1969). According to Garnsey,

(1998) because of theses scare resources, the firms must perform search activities and resource acquisition (Garnsey, 1998), or sell the product/service and business idea to possible investors or financial backers (Timmons, Smollen, and Dingee, 1977). Ownership can be in terms of one individual or a small group. The owners and workers are in one home community (Scott and Bruce, 1987).

STAGE 2 – COMMERCIALIZATION

In this stage, the new venture concentrates on refining a final product/service or technology for commercialization (Kazanjian, 1988). The main focus is on creating a product/service that works well and can be launched. In terms of ownership, the venture is controlled by either a single owner or a small number of partners and is starting to bear resemblances of a smaller team of employees with different expertise and competences (Lewis and Churchill, 1983; Kazanjian, 1988), necessary to develop a finished product, and commercialize it. At this stage some formality is starting to appear (Lester et al. 2003; Quinn and Cameron, 1983). The management style in the new venture shifts from unstructured to simple (Scott and Bruce, 1987), with an entrepreneurial-administrative management style. The employees make no major decisions independently, but are rather supervised by the owner (Lewis and Churchill, 1983). By the end of this stage, the venture has a finished product/service ready for sale (Kazanjian, 1988). This stage is important, since the lack of success for many startups is caused by inappropriate product implementation (Nobel, 2013). Many of these startups do not realize that they are selling the wrong products and as a consequence they spend a large portion of money for marketing and sales.

STAGE 3 – GROWTH

The growth stage, also known as success or maturity stage (or high growth stage, early growth stage) happens once the venture has a product or service which has accomplished feasibility and market acceptance (Kazanjian, 1988). Shifting from a product to commercial orientation, the major problems become more concerned around production, selling, and distribution of products or services in high volumes (Abernathy and Utterback, 1978). The management style remains somewhat entrepreneurial but is also starting to shift towards a more co-ordinate style (Scott and Bruce, 1987). Formalization within the organization is starting to form, as the venture becomes more structured and specialized, thus challenges associated with transforming the organization into a functional (Lewis and Churchill, 1987; Scott and Bruce, 1987; Lester et al. 2003), efficient, and effective system arises (Kazanjian, 1988; Lewis and Churchill, 1987). The manager in this stage may remain central to all decision making (Kazanjian, 1988), or may move towards a more bureaucratic function (Lester et al. 2003; Quinn and Cameron, 1983), as more professionally trained and experienced people start to join. It is thus important to note, that in this stage, the venture *"experiences an almost constant state of change"* (Kazanjian, 1988: 265). Only when this constant state of change has stabilized, the firm can move towards the next stage which is stability.

STAGE 4 – STABILITY

The problems in this stage are maintaining growth and market position (Tushman, 1982). Ventures in this stage are expanding their product portfolio and becomes concentrated on a second-generation product. The firm has transformed into a *"stable, functional and operating company characterized by bureaucratic principles across the organization"* (Kazanjian, 1988: 265), thus informal entrepreneurial leadership is no longer appropriate in this stage (Garnsey, 1998).

2.7 Definition of marketing

Since this study focus on Marketing Challenges, it would be obvious to give a definition of what Marketing is. Clearly, the vast literature on marketing offers great amount of definitions. However, due to the distinct views and interpretations of the topic, a definition of marketing should thus be *"dependent on the perspective and discipline"* (Duening, Hisrich, and Lechter, 2015: 234). The American Marketing Association, (2013) defines marketing as: *"the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large".* Other researchers (Hills and LaForge, 1992; Grönross, 1989; Felton, 1959) views marketing from a customer oriented approach where the *"primary focus on adopting a customer orientation, integrating that orientation throughout the organization, and thereby achieving goals that transcend just sales (most notably profit)*" (Hills and LaForge, 1992: 39).

Looking away from these definitions, Webster, (1992) found that small business owners interpret marketing as being a method which involves specific activities and techniques (commonly the 4p's). Similarly, Stokes (2000) conducted a study through interviews and focus groups of small business owners, and found that a large portion of the sample viewed marketing as *"selling and promoting only"*. (p. 6).

In this study, marketing is viewed as being activities rather than organizational philosophy or strategy (Webster, 1992). Thus it is adapting the definition from the American Marketing Association (2013). The argument is that in new ventures, such as start-ups, the owner or manager is a central person for all decision making (Stokes, 2002) and form all the activities within the firm (Hill and Wright, 2000), thus it indicates that marketing might be carried out in inexperienced ways.

2.8 Marketing challenges and characteristics of start-ups

Marketing in small, newly founded, and entrepreneurial firms such as start-ups, has demonstrated to be an important subject for stimulating firm growth and success (Gruber, 2004). Marketing-entrepreneurship as described by Hill, Nancarrow, and Tiu Wright (2002), views marketing as "key" in helping small firms to grow into effective and competitive businesses. In fact, it is critical to the survival and development of small firms, and a key entrepreneurial competency (Carson et al. 1995).

However, marketing seem not to be an easy task for many newly founded ventures, as they have competitive, managerial and organizational deficiencies, limited financial resources, and limited human resources (Shelton, 2005), which in the literature have been argued to occur due to their natural characteristics of newness, smallness, and, uncertainty and turbulent environment (Stinchcombe and March, 1965; Cromie, 1994). Furthermore, these characteristics create various marketing challenges (Brush, Greene, and Hart, 2001;

Davidsson et al. 2002; Lichtenstein and Brush, 2001; Man, Lau and Chan, 2002; Gruber, 2004; Wilson, 1995; Gruber, 2004) which will eventually determine their future (Romano and Ratnatunga, 1995).

A challenge by definition is according to various dictionaries *"the situation of being faced with/by"* (Cambridge Dictionary, 2016; MacMillian Dictionary, 2016). Start-ups can be faced by various marketing problems such as a narrow customer base, limited scope and impact of marketing activities, variable and unplanned effort, and over-reliance on the owner-manager's marketing competency (Carson, 1985; Wilson, 1995), thus the problems are the challenges. Knowing which challenges is critical to problem-solving, this can help in eliminating waste of time and resources which are scarce for start-ups.

NEWNESS

New firms, like start-ups usually suffer from liability of newness (Freeman, Carroll, and Hannan, 1983; Stinchcombe and March, 1965; Cromie, 1994). Because they are new to their internal and external environment in which they exist, they must learn how to deal effectively with problems and challenges associated with these environments, and are therefore exposed to considerably higher chance of failure (Stinchcombe and March, 1965). They are young, and have not yet fostered a company culture, have not yet established stable links (exchange relationships) with clients, supporters, and customers, which are required in order to stimulate growth, and they are heavily dependent on interactions with "strangers" as no company reputation exist (Stinchcombe and March, 1965; Freeman et al. 1983; Garnsey, 1998).

SMALLNESS

In addition of being of a young age, start-ups start off small during their early stages of development. They have relatively short financial and human resources due to problems in raising capital, and so they lack personnel and necessary skills to perform against larger and already established firms (McGrath, 1996; Aldrich and Auster, 1986), which makes them vulnerable, due to weak performance in their markets and competitive environment. This creates difficulties in shifting to more favorable circumstances (Gruber, 2003; 2004).

UNCERTAINTY AND TURBULENCE

Both liability of newness and smallness are provoked by uncertainty (Gruber, 2004), which in entrepreneurship, seem to be unpreventable. The competitive environment within the industry is always changing, which provokes turbulence in the marketplace. Furthermore, startups can be viewed as *"real-life experiments"* (Gruber, 2003: 3) full of trail-and-errors, in which they must identify the appropriate combination of resources and strategy (Starr and MacMillan, 1990).

2.9 How these characteristics create marketing challenges

Because of these characteristics, they give rise to various marketing challenges that according to Gruber (2004) needs to be addressed by emerging firms in order to run profitably. They are hindrances to start-ups as they give them, "*the inability to compete effectively with already* *established firms because of their low levels of legitimacy"* (Singh, Tucker, and House, 1986: 171).

Presented in Table 2 below, is a summary of some of the various marketing challenges caused by the newness of new firms like start-ups during their early development. These challenges were borrowed from Gruber (2004).

Table 2: Marketing challenges caused by liability of newness

Marketing challenges caused by liability of newness
- Difficulties establishing social interactions (with suppliers) - Lack of exchange relationships (no established business relationships) - Lack of internal structures, processes, and routines in marketing - Lack of experience in marketing (marketing knowledge) - Lack of historical data (restricted customer base)
Stinchcombe and March, 1965; Hannan and Freeman, 1984; Robertson and Gatignon, 1986; Schoonhoven, Eisenhardt, and Lyman, 1990; Becherer, 1993; Carson, 1990; Garnsey, 1998; Stokes, 2000; Romanelli, 1989

Source: Borrowed from Gruber (2004)

According to studies (Hannan and Freeman, 1984; Romanelli, 1989; Robertson and Gatignon, 1986), firms such as startups must rely on "interactions with strangers" in their early stages of growth, due to their low reputation, legitimacy and experience within the industry (Brush et al. 2001; Davidsson et al. 2002; Lichtenstein and Brush, 2001; Man et al. 2002). They are relatively unknown to the outside environment such as potential customers and suppliers. For that reason, there is also a lack of trust connected to these firms in terms of their abilities and offerings. Start-ups are therefore faced with the challenge to acquire potential customers before an *"identity, brand name, or track record"* (Gruber, 2004: 168) is established. Because their identity is unknown (Petkova et al. 2008), they must spend marketing resources in order to create an identity, which is a process that is often very lengthy and costly. Furthermore, startups are challenged by the lack of exchange relationships between customers, distributors, and suppliers etc. Establishing such relationships is a difficult task because it is often seen as being a complementary asset. This of course creates a barrier to market entry if the relationships cannot be established. Additionally, startups lack the internal structures and processes to perform marketing activities (Rode and Vallaster, 2005) which can hinder its performance, and they also typically have a lack of experience in marketing. This lack often causes mistakes in the marketing planning and execution. Considering their scarce resources, these mistakes can further lead to serious consequences for the start-up due to their tight financial resources. Unlike larger firms, startups lack historical data they can use in the marketing planning process, which makes it more challenging.

Table 3 below is a summary of some of the various marketing challenges caused by the smallness of these firms, the table is borrowed from Gruber (2004).

Table 3: Marketing challenges caused by liability of smallness

Marketing challenges caused by liability of smallness
- Limited financial resources available for marketing - Few human resources available for marketing - Lack of critical skills in marketing (lack of expertise) - Limited market presence - Limited market power (disadvantage in negotiations)
Carson, 1985; Aldrich and Auster, 1986; McGrath, 1996; Lee, Lee, and Pennings, 1999; Gruber, 2004

Source: Borrowed from Gruber (2004)

According to Carson (1985), new ventures such as start-ups, are challenged by their limited financial and personnel resources. These limitations hinder the marketing strategies startups can pursue. Due to these limited resources, startups must rely on a high degree of effectiveness and efficiency in their marketing efforts. Consequently, they must focus on creative and low-cost marketing strategies (e.g. guerrilla marketing, bootstrapping marketing). A small firm such as a start-up might not be able to employ the same marketing procedures of the big firms, even if they may sell the same kind of products. Therefore, the marketing strategy is *"very likely to be different in many respects".* (Borden, 1964: 10).

The limited personnel resources indicate that startups also lack skills which are necessary to perform successful marketing. This is often the case with individuals of a technological background. Besides the limited resources (financial and personnel), the smallness of the start-ups can usually be associated with *"limited market presence, and lack of market power"* (Gruber, 2004: 169). Therefore, there is a high probability that marketing in these firms, face much higher costs because external partners might exercise larger margins from these firms.

2.10 How these challenges can be overcome

It is commonly agreed in the literature that launching a new venture requires necessary resources, skills, knowledge, and experience (Carson et al. 1995; McGrath, 1996; Aldrich and Auster, 1986; Wilson, 1995), which according to Wilson (1995) are challenges faced by these firms. These challenges can be overcome in a variety of ways, which we will discuss in the following sub sections.

INCUBATION

A start-up firm *"represents a raw company without any organizational structure, acting legally and economically in the market for a short time"* (Schmeisser, Krimphove, and Grothe, 2001 in Rode and Vallaster, 2005: 122). They are different from larger firms, as they start *"from weak market positions with few resources"* (Katila, Chen, and Piezunka, 2012: 117). One way to overcome this resource scarcity is through incubation. Incubation plays an important role for new ventures such as start-ups, in the realization of resource generation. Incubation is according to various literature one way in which new ventures can overcome various challenges, especially during their early stages of development. According to Chan and Lau, (2005: 12), incubators are organizations that either *"constitute or create supportive environments"* during the development of new firms such as start-ups (Peters, Rice, and Sundararajan, 2004). According to some studies (Chan and Lau, 2005; Bøllongtoft and Ulhøj, 2005), incubators can support start-ups with training and business development advice and activities, accounting, legal matters, advertising and marketing through marketing events, exhibitions, press conferences, financial assistance, shared facilities and equipment, access to clients, suppliers and subcontractors through network, access to market and research centers such as universities, and access to venture capital funding, banking facilities and other funding sources (Chan and Lau, 2005).

HUMAN CAPITAL

Human capital has shown to affect the creation of business ideas and the resources available to the firm (Van Gelderen et al. 2005). It includes knowledge, skills, education and experience according to Deakins and Whittam (2000). Having the necessary marketing skills and knowledge can contribute to the accomplishment of eliminating the various marketing challenges encountered during the different stages of growth. For instance, Schoonhoven et al. (1990) found that new firms that have experts in marketing in their founding organizational structure experience less marketing challenges.

FINANCIAL CAPITAL

According to Brush, Greene and Hart, (2001), one of the greatest challenges faced by start-ups is attracting resources into the firm from potential resource providers. Few financial resources are believed to influence the options of selecting an alternative marketing strategy; it can restrict the marketing tasks, restrict market entry, and affect the chance of acquiring marketing specialists (Davis, Hills, and LaForge, 1985; Oakey, 1991; Weinrauch et al. 1991). Though start-ups have difficulties gaining support from financial “backers” (Timmons et al. 1977; Aldrich and Auster, 1986), mainly due to the high risk associated to these firms caused by their newness, some startups actually gain support from venture capitalists (VCs) which increases the firms' resources (Aldrich and Auster, 1986; Gompers and Lerner, 2001). Start-ups who are unable to raise capital from VCs, may seek other financial sources such as, funds from personal savings, borrowing from financial institutions such as bank loans or debts, government funds, and public equity offerings (Winborg and Landstrom, 2001). However, VCs according to Gompers and Lerner (2001) differ from other conventional financing, as they in addition to financial resources also contribute with coaching in the early stages of growth. Also Davila, Foster and Gupta, (2003) argue that VC firms, have the ability to overcome various obstacles during these early stages of development. Regardless of type of finance, it is agreed that they all add extra capital to the firm which helps fuel extensive firm growth (Nelson and Winter, 1977; Garnsey, 1998), as it allow other resources such as human capital to be bought in (Garnsey, 1998). However, the importance of external finance is well documented in Carpenter and Petersen (2002), who found that small manufacturing firms raise little external finance, and as a result growth was constrained by internal finance.

3 Research objectives

GROWTH OBJECTIVES

In the life cycle literature, growth has been used as a contextual dimension along the growth model. According to Kazanjian (1988: 264) *"most of the crises, and certainly those in manufacturing and marketing, were overcome by expanding numbers and types of employees"*. Also Garnsey, (1998) argues that growth is limited by the rate at which new employees and experience can be obtained by the firm. However, according to the findings (Birley, 1987), firms that had increased the number of employees were of all ages. We therefore suggest the following hypothesis:

H1: The more employees the higher the stage of growth

Concerning age, Phelps et al. (2007) suggest that firms do not grow equally, and they vary in duration and extent of overlap (Garnsey, 1998). Although these stages occur in order, they were also found to not be strongly correlated with age of the firms (Van de Ven, Hudson, and Schroeder, 1984; Lippitt and Schmidt, 1967). The findings of Evans, (1987) suggest that firm growth decreases with age. We therefore suggest:

H2: The older the firm, the higher the stage of growth.

MARKETING CHALLENGE OBJECTIVES

Dodge and Robbins, (1992) found in their study of 364 small business case reports, that marketing problems appeared to prevail during formation and late growth stages. Kazanjian (1988) from whom our growth model is borrowed, found marketing to be a dominant problem and significantly more important to firms in stage 3 than in other stages. His findings also suggest that sales and marketing problems were rated much higher in stage 2 than in stage 1. On a contrary Lewis and Churchill (1983) believed marketing to exist as a major issue in their "existence" stage (in this case, conception and development stage), and as the firm grows, marketing becomes a minor issue. They further postulated that with growth, marketing decreases from "critically important" to "modestly important". Similarly, Shim et al. (2000) tested whether or not business problems differed by growth stages, their results indicate that problems of marketing and sales diminished with growth. Supporting the findings of Kazanjian (1988) is the work from Tybjee et al. (1983) who found the importance of marketing to increase alongside the firm as it grows. Other studies (Garnsey, 1998; Phelps et al. 2007) argue that important problems facing firms beyond the early stages are variable and not sequential, and that each firm has unique problems. Day (1999) argues that creating and recreating the firm is a continuous process. When changing its organizational structure, new undesired "side effects" emerges, in which new challenges must be addressed by the new organizational structure. From the above findings, we propose the following hypotheses:

H3: Stage 1 and Stage 2 firms will rate marketing challenges associated with smallness and newness higher than firms in other stages.

H4: There is a great variability in ratings of marketing challenges associated with smallness and newness for all stages.

Another aspect that is relevant to consider in this study is the market served by the start-ups. What is meant by market served, is whether the start-up is aiming at serving the national or international market, or both (Chen, Zou, and Wang, 2009; Zahra, 2005). For instance, Ripolles and Blesa (2011) found that firms that experience early internationalization are confronted with greater marketing challenges, which then becomes an important aspect in their growth and success. Thus we formulate the following hypothesis:

> **H5:** Start-ups serving international markets or both markets (domestic and international) rate marketing challenges higher than start-ups that serve only the domestic market

INCUBATION OBJECTIVES

As the literature suggest start-ups benefit from access to resources and support in the early stage of growth (Garnsey, 1998). As such, it would be interesting to test whether:

> **H6:** Incubated start-ups will rate marketing challenges lower than will start-ups that are not incubated

HUMAN CAPITAL OBJECTIVES

According to Lewis and Churchill, (1983) the owner takes charge of the marketing and sales activities in the "existence" stage (stage 1). Kazanjian, (1988) and (Drazin and Kazanjian, 1990) concluded that different problems, must be addressed during different stages of growth, resulting in the need of different management skills. As such, we suggest the following hypotheses:

> **H7**: The owner in all stage 1 firms is responsible for the marketing activities

FINANCIAL CAPITAL OBJECTIVES

As discussed earlier, regardless of type of finance, it is agreed in the literature that they all add extra capital to the firm which helps fuel extensive firm growth (Nelson and Winter, 1977; Garnsey, 1998), as it allows other resources such as human capital to be bought in (Garnsey, 1998). As such we formulate the following hypothesis:

> **H8:** Firms with more financing will rate marketing challenges lower than will firms with less financing.

4 Research design and methodological consideration

In this section we describe the method employed for this study, which according to Brewerton and Millward, (2001) should be appropriate to the questions asked (hypotheses).

4.1 Design

Most studies on organizational change, only document evidence of changes having taken place, and they all lend themselves to tracking the changes across time periods (Stubbart and Smalley, 1999). The problem with such approach is that it requires tracking organizations over a long period of time (Cameron and Whetten, 1981) and for that reason these studies are researched longitudinally (Davidsson, Achtenhagen, and Nalldi, 2005). However many of them were in fact cross-sectional designs, in which characteristics in the organization are investigated (Hanks et al. 1993). This approach involves assessing data from one specific point in time which Davidsson et al. (2005: 3) argue to be rather a *"prediction of the past"*. Bearing in mind that this study does not intend to track down organizational change or growth, but rather trying to identify and compare start-ups in different stages of growth at a single point in time (present), a descriptive cross-sectional research design was selected, thus a large sample will be required (O'Farrell and Hitchens, 1988). The reason for analyzing the firms' current stage and not over a longer period (longitudinally) can be based on the argument of Davidsson and Wiklund, (2006). According to their argument, trying to study growth over time by following the same firm is in fact a paradox, since that firm is very likely to adjust its activities and structures, and so it is no longer "the firm" as originally defined.

The instrument used for this research design was an online self-categorization questionnaire (Hammond's categorization in Brewerton and Millward, 2001), which is a well suited instrument for collecting large quantitative data (Malhotra and Birks, 2006) through survey technique (Kothari, 2004). It is often used in research where the differences between individuals or small groups are of interest (Brewerton and Millward, 2001).

4.2 Data collection method

A survey is a method in which a research is conducted for the purpose of collecting information in terms of either some characteristics, actions, or opinions, about a large number of people (Tanur, 1983), and are thus intended to generate quantitative descriptions of the subjects being studied. According to Pinsonneault and Kraemer, (1993: 77) this is usually done by *"asking people structured and predefined questions",* in which their response may concern the subjects or other groups of interest. The studied sample of a given population should yield results in a way that it should allow the findings to be generalizable of the population.

The purpose of selecting the descriptive survey for research purpose was to identify what situations and events were occurring in the population of start-ups, with respect to their current growth stage and their marketing problems. Such research simply ask *"about the distribution of some phenomena in a population or among subgroups of a population*" (Pinsonneault and Kraemer, 1993: 80), thus the researcher is only concerned with describing a *“distribution or to make comparisons between distributions”* (Pinsonneault and Kraemer, 1993: 80). Thus it is meant to ascertain facts, not to test theory.

This instrument is according to Romano and Ratnatunga (1995) the most predominant methods employed in marketing research. Also a variety of life cycle studies (Miller and Friesen, 1983; 1984; Smith et al. 1985; Lewis and Churchill, 1987; Kazanjian, 1988; Hanks et al. 1993; Lester et al. 2003) have implemented such instruments (see appendix A). Such research design can only report *"what has happened, or what is happening"* (Kothari, 2004: 3), though we can only utilize comparative methods.

4.3 Sample technique

A purposive non-probability sampling also known as convenience sampling was selected for this study due to the underlying interest in a particular group (start-ups). According to Couper (2000), surveys usually include non-probability samples. A total of 287 incubated start-ups in Portugal were selected, respectively 161 incubated start-ups in Porto, and 126 incubated start-ups in Lisbon. This sample was selected from the websites of the incubators, which provided the necessary contact information. The sample technique used here was further appropriate as no directory on start-ups in Portugal exists. Similarly Davidsson and Wiklund, (2006) experienced similar difficulties. This might also explain why the sample from most studies (e.g. Greiner, 1972; Lester et al. 2003; Kimberly et al. 1980; Quinn and Cameron, 1983; Hanks et al. 1993; Miller and Friesen, 1984; Smith et al. 1985) were drawn from large companies. Some of these large companies who are in the stock market, or by special legal form, are required to public their financial accounts (Mata, 1994), which makes secondary data collection easier to access. The drawback of the non-probability sampling technique is that the sample may not be representative of the whole population (Malhotra and Birks, 2006). Dillman and Bowker (2001) argue that for web survey, this is rather a normal phenomenon since there is a lack of standardized email addresses which means that it is difficult to generate random samples in comparison to research utilizing telephones to collect data, where random digit dialing is an option.

4.4 Questionnaire development

The questionnaire contained a combination of ordinal, dichotomous, nominal, and ratio scales, with a total of 20 items. A complete summary of each item and the type of scale is available in appendix B. It was divided into four sections, though the length of the survey was relatively short. The first (1) section contained measures for "current growth stage", the second (2) section contained measures for "marketing challenges", the third (3) section contained measures for “marketing communications”, and the fourth (4) section contained measures for "demographics". A full replica of the questionnaire is available in: Appendix C, Appendix D, Appendix E, and Appendix F. Each of these measurement scales will be presented in detail below.

MEASURING GROWTH STAGE

Studies on organizational life cycle have commonly used two approaches to measuring growth stages. One of these approaches is "hypothetic-deductive" approach where multiple variables determine the specific stage category (Smith et al. 1985), and another approach is a "self-typing" approach (Snow and Hambrick, 1980) used in the study of Kazanjian, (1988). Regardless of these two approaches, they both lend themselves into segmentation/categorization of stages.

This approach in classifying firms into types or groups is according to McKelvey and Aldrich, (1983) an alternative to the idea that firms are either all similar, or all separately unique.

In order to measure the current growth stage, an ordinal measurement scale borrowed from Kazanjian (1988) was used, in which the founder(s) of the start-ups were asked to select a description that most closely matched their own firm (see appendix C). Such measurement is also known as "self-typing" in organizational strategy studies (Snow and Hambrick, 1980). Four descriptions were provided, each indicating one of the four stages in Kazanjian's four-stage model. The descriptions were not labeled. This approach allowed the founder(s) to select a description based on their own perceptions and opinions of their firm’s current stage of development.

MEASURING MARKETING CHALLENGES

In order to measure marketing challenges two scales were developed, respectively one for marketing challenges associated with smallness and one associated with newness (see appendix D). The items within these two scales were borrowed from the work of Gruber, (2004) who identified various marketing challenges faced by new venture firms. Both scales contained five likert-type items (in total 10 items), in terms of statements which the respondents were asked to report how much of a challenge these statement were to the firm on a scale from 1 to 7 (where 1= a minor challenge, 4= somewhat of a challenge, and 7= a major challenge). Since the items were of likert-type they were not combined into a composite scale. Because these items expresses a "greater than" relationship without being able to imply how much greater, these items fall into the ordinal measurement scale (Boone and Boone, 2012).

MEASURING MARKETING COMMUNICATIONS

In order to collect some marketing information about start-ups, three measurements were used. One measurement concerned “marketing performer” (the person responsible for marketing within the firm), which was measured on a nominal scale where 1= founder(s), 2= employed marketer, 3= external entity, and 4= other. The fourth option “other” was an open question in which the respondents were able to provide their own response.

The second and third measurements were in terms of nominal scales where multiple options could be selected. These measurement scales concerned; 1) use of medium (online vs traditional), and 2) Modes of communication (Advertising, Events and experiences, Direct marketing, Word-of-mouth marketing, Sales promotions, Public relations and publicity, Interactive marketing, Personal selling) borrowed from Kotler and Keller (2014). (See appendix E)

MEASURING DEMOGRAPHICS

According to McKelvey and Aldrich, (1983) the necessity to include appropriate descriptions and classification of firms under investigation is important, in order to enhance the relevancy to those whom might contribute from such research. In fact, it is the firm characteristics which should serve as the classificatory basis of organizations (Perrow, 1967). For these reasons, a section asking for demographics of the firms was included (see appendix F).

The descriptive information was requested as the last section in the survey in order to insure decrease in reactivity, accuracy, and boredom (Brewerton and Millward, 2001). Age was measured as a continuous variable providing discrete data (finite values). The respondents were asked to indicate how old the firm was in whole years (e.g. 1999, 2003) and was subtracted from current year (2016) to find the age. Even though it is common for continuous variables to be converted into categorical variables such approach was not used as it might not be a wise choice (Altman, 1998 in the Landau and Everitt, 2004). Similar to age, size was measured as a continuous variable in which the respondents were asked indicate how many number of employees they currently had employed (in whole numbers, including founder(s), excluding interns).

The respondents were also asked to indicate to which market their offerings were aimed at. This was measured on a nominal scale allowing the respondents to select one option from, B2B, B2C, B2B2C, C2C2B, and B2G. Further, a nominal (dichotomous) scale was developed where the respondents could select whether they were incubated, or not. Even though the sample was drawn from incubator websites, there was doubt whether all of the sampled firms were still incubated.

Further a nominal scale was created in which the respondents were asked to state which market they currently were serving. Two options were provided (National vs. International market), and the respondents were able to select both markets. Also a nominal scale asking in which category (product vs. service) their primary offerings were in was developed. Last but not least the respondents were asked to indicate their major sources of finance, the options available were borrowed from Winborg and Landstrom, (2001). This was measured using a nominal scale in which multiple options were available.

4.5 Mailing procedure and response

The data collection of primary data focused on the marketing challenges experienced by 287 start-ups, in their current stage of the firm life cycle. The purpose was to compile a quantitative database.

Prior to sending out the questionnaire it was thoroughly reviewed and checked for loaded questions, double questions, ambiguous questions, inappropriate vocabulary, and missing alternatives suggested by Payne (1951, in Hunt et al. 1982).

The survey was created and administered through Sosci Survey (Leiner, 2015) which is free software (for non-commercial scientific research), and was made available to the participants through a link sent by email which guided them to the online survey. The questionnaire was developed with the intention to collect demographic/descriptive data. The demographic data was collected for the purpose of examining differences and similarities between groups in the sample.

Before proceeding to the survey, instructions were provided to the respondents which according to Brewerton and Millward, (2001), should always be provided for self-report questionnaires. The respondents were assured anonymity throughout the questionnaire. The survey had an administration period of 16 days, and was initiated on the 27/06/2016 and ended on the 12/07/2016. Two follow-up emails were sent out in-between in an attempt to remind about the possibility to still participate in the survey. The message was sent to a total of 161 recipients in Porto and 126 in Lisbon. From the 136 messages delivered in Porto, 117 were not started, and 14 not completed. For Lisbon, 111 questionnaires were not started, and 3 not completed.

The analysis for the data obtained from the survey was conducted using SPSS 22 which was provided by the university. The response rate statistics indicate 32 respondents corresponding to 11.14 percent of the target population, of which 10 were not fully completed, leaving a sample size of 22 fully completed questionnaires. From these 22 questionnaires, 12 cases were categorized as being in the conception and development stage, 8 cases in the commercialization stage, and only 1 case for both, growth and stability stage (see Figure 3 below). Due to this low response rate, the two stages were removed as they were not representative, leaving a total sample of n=20.

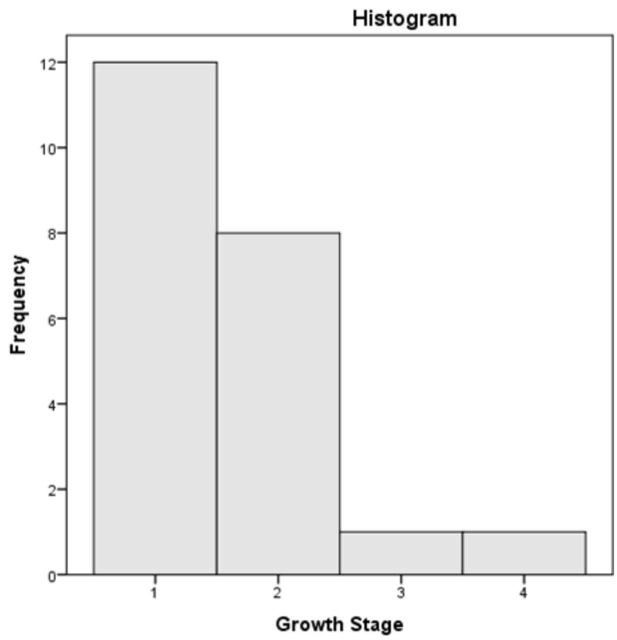


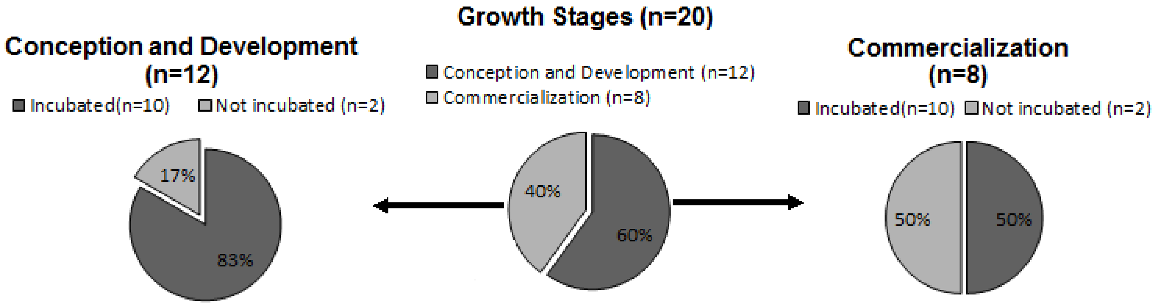
Figure 3: Frequency of sample size (n=22)

Since size of any research sample will affect the type, level and generalizability of analysis that can be undertaken, the total sample size will significantly affect the accuracy of the results reported by statistical tests (Brewerton and Millward, 2001).

4.6 Sample profile

According to Davidsson and Wiklund (2006), any interpretation of firm growth depends on the definition of the firm before any meaningful discussion of growth can come about. A full review of the sample profile is available in appendix G**.**

Figure 4: Summary of growth stages



Provided above in figure 4 is a summary of the frequency associated with growth stage and incubation. 60 percent of the respondents (n=12) were categorized as being in the conception and development stage, of which 83.33 percent were incubated and the remaning16.67 percent were not incubated. 40 percent of the sample (n=8) was in the commercialization stage of which 50 percent were incubated, and 50 percent were not.

4.7 Descriptive and summary statistics

Figure 5 below, present the frequency of the two contextual dimensions, which are age and size (number of employees) of the participants from the two growth stages; conception and development, and commercialization.

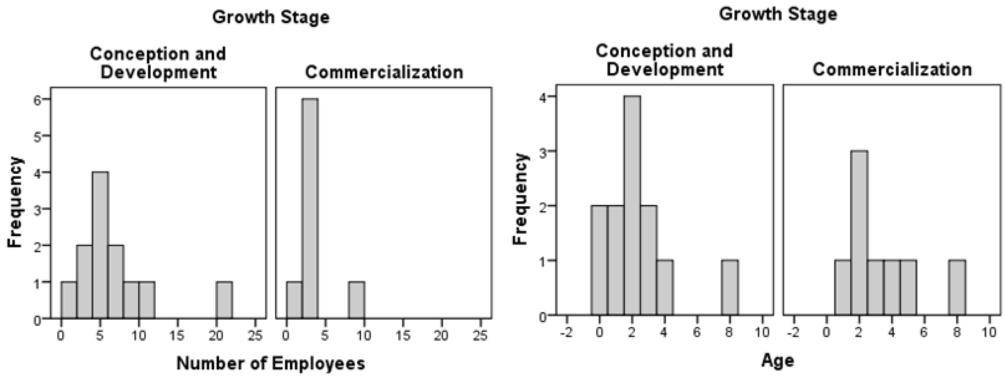


Figure 5: Summary of age and size

The frequency of "size" from the sample in the conception and development stage had a size ranging from 1 to 20 employees, with an average number of 6.25 employees, while the age distribution ranged from 0 (current year) to 8 years, and an average age of 2.33 years. Similarly, the size range for the commercialization stages ranged from 1 to 8, with a mean size of 3 employees, while the age range was ranging from 1 to 8, and an average age of 3.38 years.

The frequency of the sector in which the sample was operating in is provided in figure 6 below.

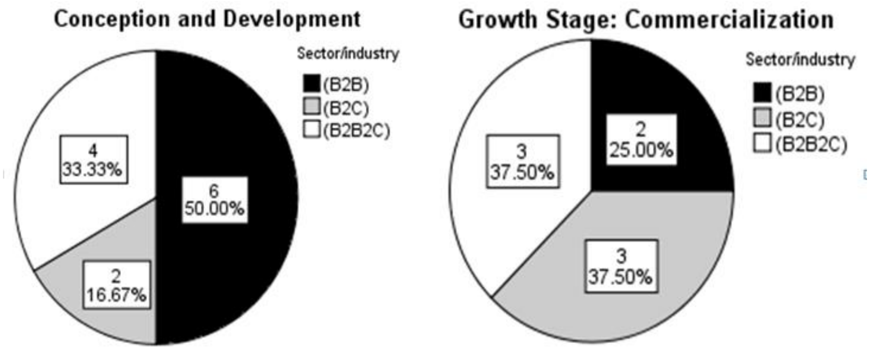


Figure 6: Summary of sector

For each growth stage the frequency of sector/ industry is displayed in percentage and number of cases. Even though several alternatives of B2B, B2C, B2B2C, C2C2B, and B2G were provided, only the three alternatives of B2B, B2C and B2B2C were of important categories. In the conception and development stage, 50 percent of the total sample (n=12) were in the B2B sector, while 16.67 percent were recorded as being in the B2C, and the remaining 33.33 percent in the B2B2C sector. In the commercialization stage, 25 percent of the total sample (n=8) were in the B2B sector, and the remaining percentages were evenly distributed in the remaining two sectors, with 3 cases in each (B2C, and B2B2C).

In order to examine in which market the two sample groups were operating in, with respect to the national (Portugal), international, or both markets, we analyzed the frequency, which is provided in figure 7 below.

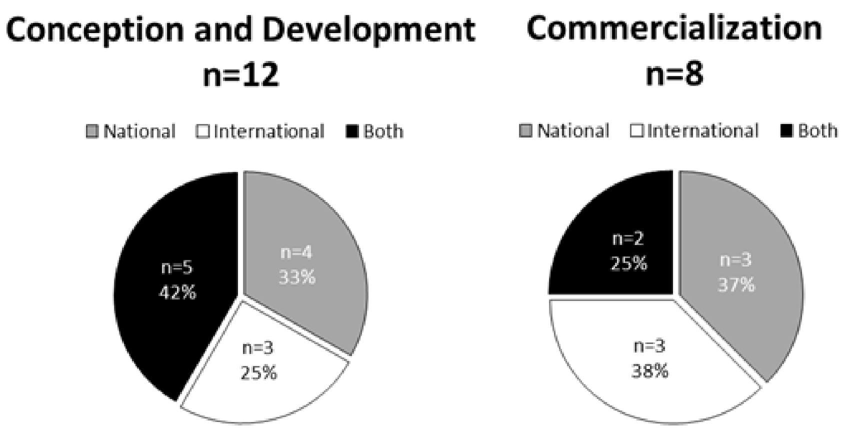


Figure 7: Summary of market served

For the conception and development stage, 42 percent of the respondents were serving both international and the national market (Portugal), while the remaining 58 percent of the respondents were serving one market. For the commercialization stage, 25 percent of the sample (n=8) were serving both markets, while the remaining 75 percent were evenly distributed across the national and international markets.

As to product/service offering, figure 8 below show the frequency of both growth stage groups. In the conception and development stage, products and services were equal in terms of the size of the samples belonging to each group (n=6). For the commercialization stage, product offerings had a larger sample (n=5) in relation to service offerings (n=3).

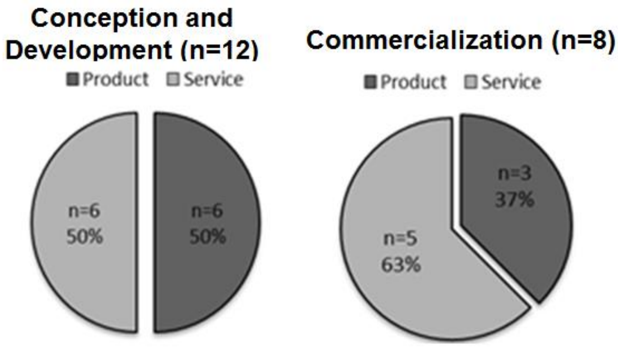


Figure 8: Summary of product/service offerings

Concerning source(s) of finance, the frequency of the six sources of finance that were provided in the questionnaire were analyzed. The results are provided in figure 9 below.

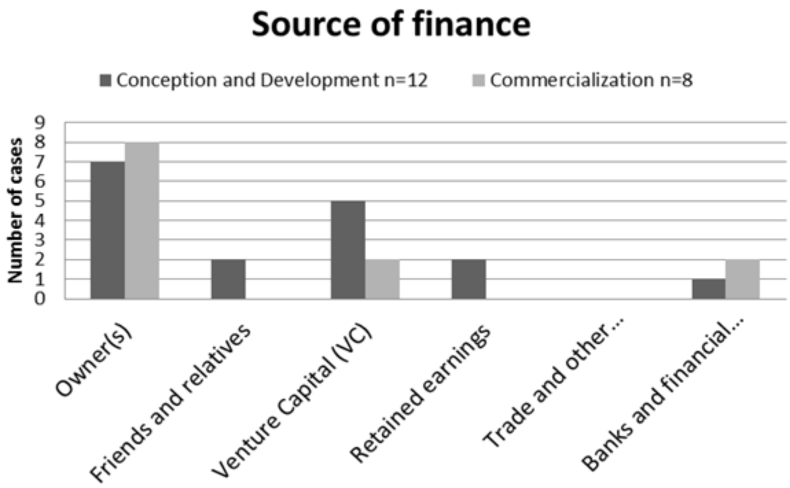


Figure 9: Summary of sources of finance

Looking at the sources of finance, owner(s) seem to be the major source of finance used by these start-ups for both stages, while the rest is scattered around the remaining sources of finance. Venture Capital seems to be the second most commonly used source of finance for start-ups in the conception and development stage, while trade and other creditors, seem not to be used as a source of finance for any of the two stages. Friends and relatives, and retained earnings seem not to be a source of finance for the sample in the commercialization stage.

4.8 Sub-groups

Alternatively to classifying the sample according to growth stage, a further classification was utilized (see appendix H). The classification criteria were growth stage, sector, market served, and product offerings. A total of 8 groups were identified for the conception and development stage, while 5 sub-groups were identified for the commercialization stage. The group that appeared most frequently (n=3) for the conception and development stage was start-ups, in the B2B2C sector, operating in the national market, with a product offering. For the commercialization stage the most frequent (n=3) group was start-ups in the B2C sector, operating in the national market, with a service offering. However, due to the low sizes in each group, no further analysis was conducted.

4.9 Summary statistics of marketing variables

In this section, are presented some descriptive statistics on the marketing challenges drawn from the sample (n=20). Presented below in figure 10, is a summary of medium usage for marketing communication activities in regards to online vs. traditional medium.

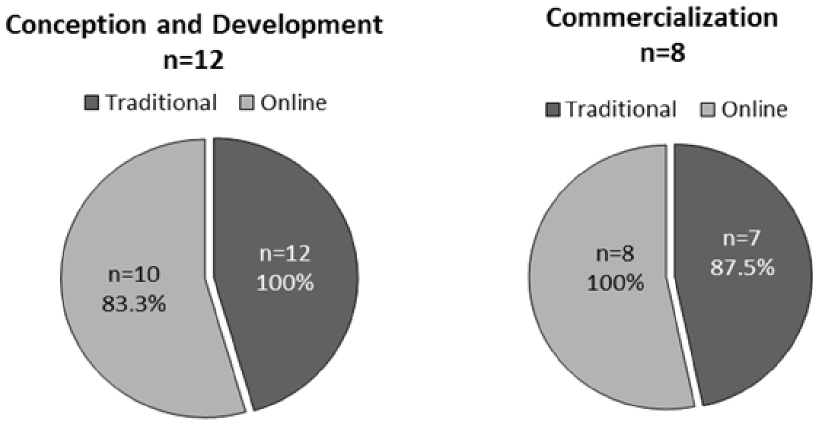


Figure 10: Summary of medium usage

For the conception and development stage, 100% of the sample (n=12) were using the online medium to communicate, and 83.3% (n=10) were using traditional medium. The sample from the conception stage show similar results with 100% using the online medium and 87.5% using traditional medium for their communication activities.

As to which modes of communication were most used in the sample for both stages is presented below in figure 11. The figure is displayed in number of cases, and in percentage. The visualized summary statistic show that the marketing communications used within each stage is very scattered. Advertising, direct marketing, sales promotions, and interactive marketing are the most common used modes of communication by the sample in the commercialization stage (looking at percentage). Event and experiences, word-of-mouth marketing, public relations and publicity, and personal selling seem to be the most commonly used communications for the sample within the conception and development stage.

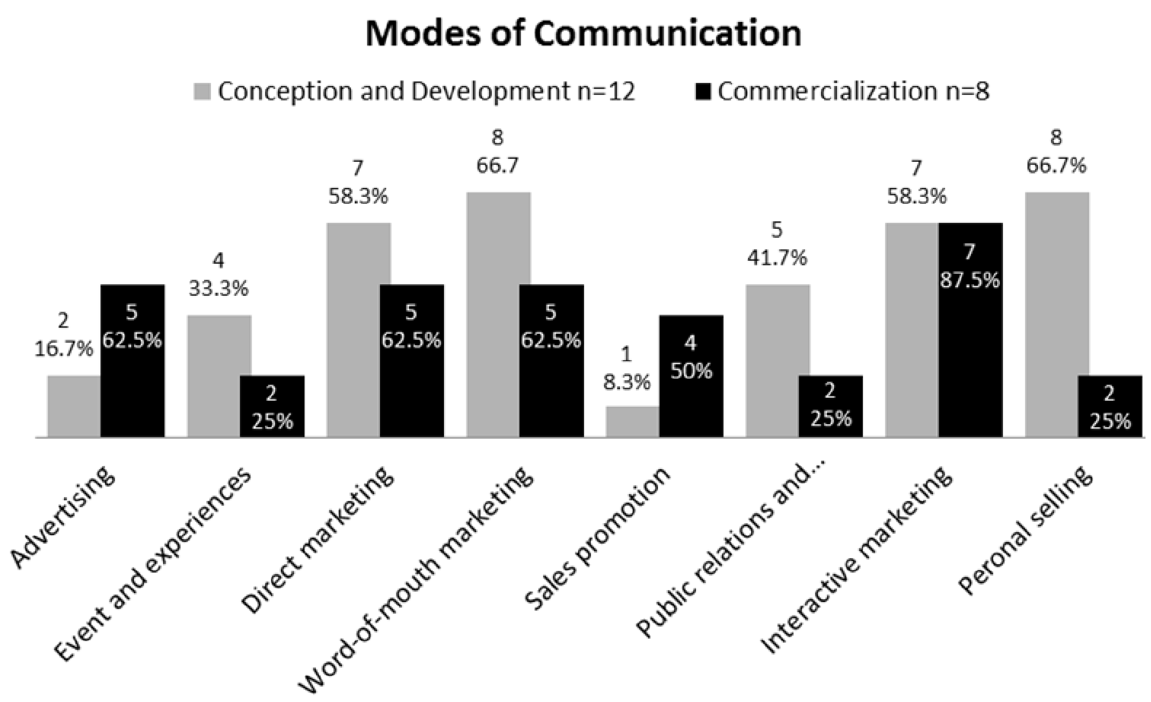


Figure 11: Summary of modes of communication

5 Results

In this section the results from the hypotheses testing are presented. The hypotheses are summarized in table 4 below.

Table 4: Summary of hypotheses

Summary of hypotheses	
H1:	The more employees the higher stage of growth
H2:	Age is not correlated with growth stages.
H3:	Stage 1 and Stage 2 firms, will rate marketing challenges associated with smallness and newness higher than firms in other stages
H4:	There is a great variability in ratings of marketing challenges associated with smallness and newness for all stages.
H5:	Start-ups serving international markets or both markets (domestic and international) rate marketing challenges higher than start-ups that serve only the domestic market
H6:	Incubated start-ups will rate marketing challenges lower than will start-ups that are not incubated
H7:	The owner in all stage 1 firms is responsible for the marketing activities
H8:	Incubated start-ups will rate marketing challenges lower than start-ups that are no incubated

Testing hypothesis 1 which states that, the more employees the higher the stage of growth, and hypothesis 2 which states, the older the firm, the higher the stage of growth, can be visualized in figure 12 below (For larger visualization, please view appendix I).

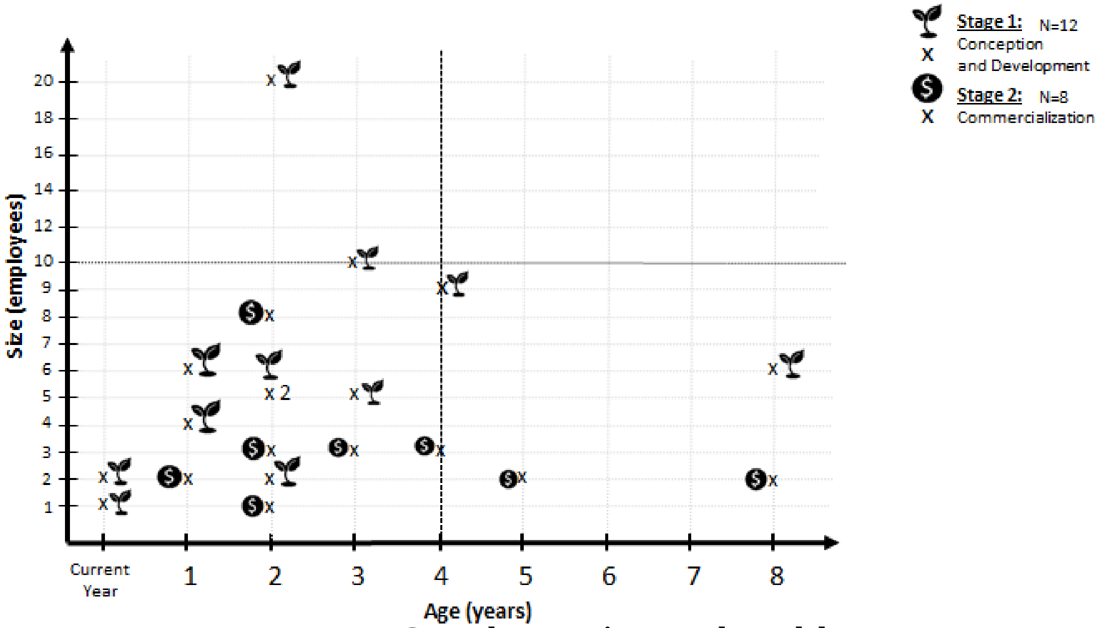


Figure 12: Growth stages in growth model

The two contextual dimensions, age and size were used along the x-axis (age) and y-axis (size), where each respondent from the total sample (n=20) was "mapped" into the graph according to their age and size. The visualization of the results indicates that age and size are very scattered, and that there is no symmetry between age, size and growth stage. Respondents categorized as being in the commercialization stage seem to be of the same age as those in the conception and development stage. The visualization also indicates that the majority of the sample in the conception and development stage are of higher size, in terms of employees in relation to the majority in the commercialization stage.

Testing hypothesis 3 was not possible due to the lack of sample for stage 3 and stage 4 start-ups. However, testing hypothesis 4 was done by calculating the mean score of the rankings of the marketing challenges of the respondents from each stage. The results are provided in visualized format in figure 13 below. A descriptive version is available in appendix K.

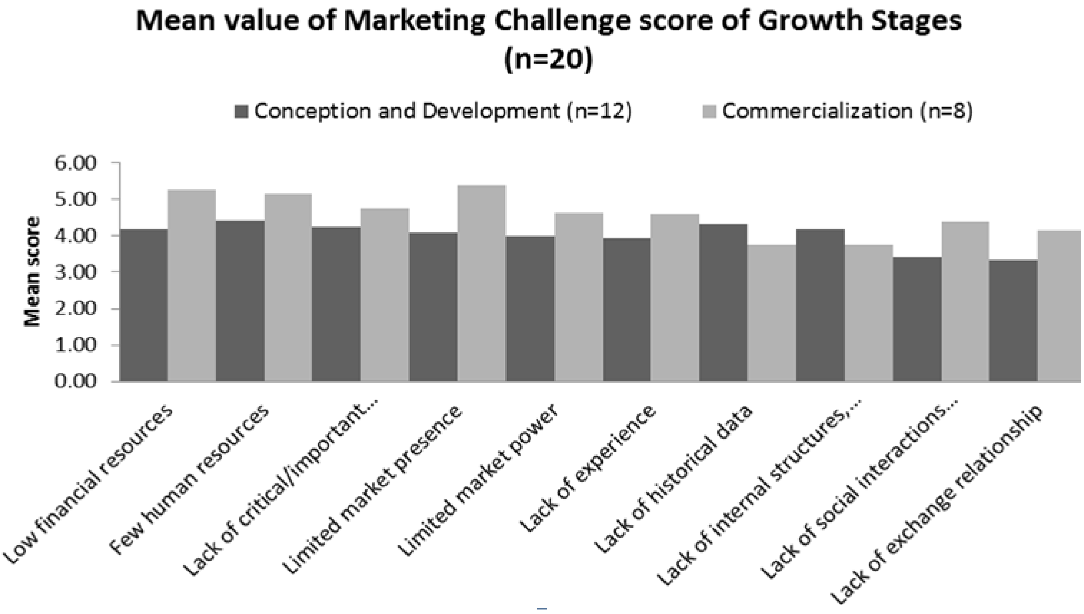


Figure 13: Mean score of marketing challenges in growth stages

Each marketing challenge variable was measured on an ordinal scale recorded from 1 to 7 (1= a minor challenge, 4= somewhat of a challenge, 7= a major challenge). The mean score from each variable was calculated for the sample in each stage, which Kazanjian (1988) also did for his dominant problems. In general, the sample drawn from the commercialization stage seem to record higher on most Marketing Challenge variables with exception to "lack of historical data" and "lack of internal structure, processes and routines", in relation to the sample from the conception and development stage, with an average mean of 4.58 against 4.01. For the conception and development stage, most of the marketing challenges seem to be in the middle score of 4 or less (minimum mean: 3.33 – maximum mean: 4.42), indicating "somewhat of a challenge", while for the commercialization stage, the mean score is ranging from 3.75 (minimum) to 5.38 (maximum). In total, the sample in the commercialization stage record higher scores looking at the mean in relation to the sample in the conception and development stage.

In order to test hypothesis 5 which states; Start-ups serving international markets or both markets (domestic and international) rate marketing challenges higher than start-ups that serve only the domestic market, the total sample was divided into the markets served, where after, the mean value for each marketing variable was computed for each group (appendix J). The results are visualized in figure 14 below.

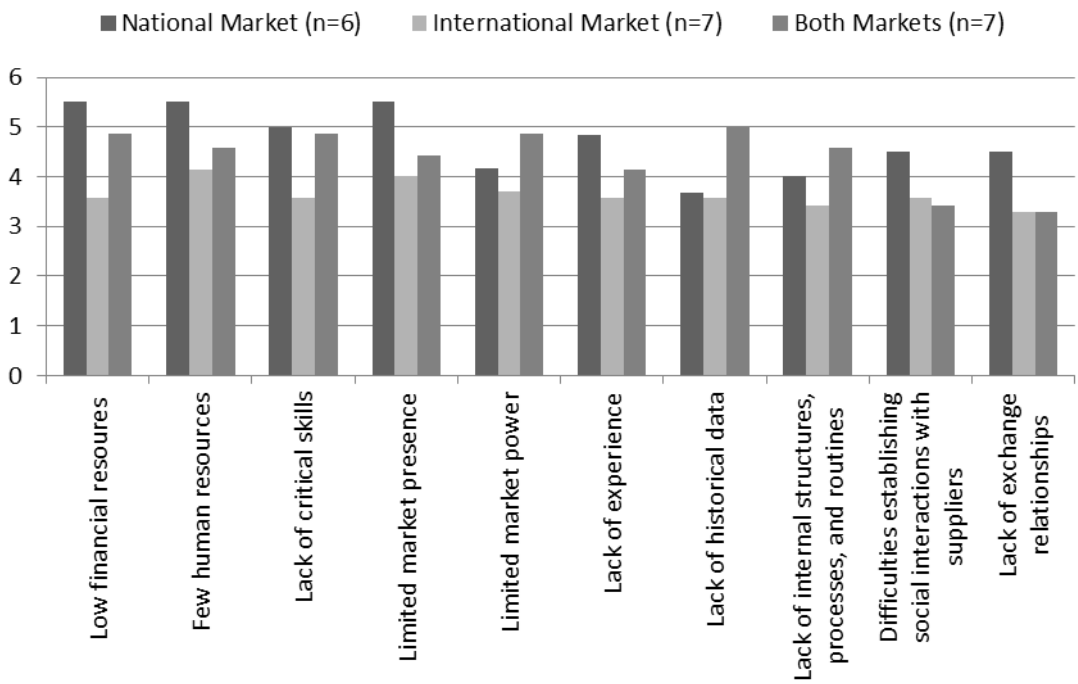


Figure 14: Mean score of marketing challenge variables to market(s) served

The results show that the majority of marketing challenges were rated relatively higher for start-ups serving the national market, with exception to “limited market power” for marketing, “lack of historical data” for marketing, and “lack of internal structures, processes, and routines” for marketing. Surprisingly, start-ups serving the international market scored lowest for all marketing challenges with exception to “difficulties establishing social interactions with suppliers”. The start-ups serving both markets scored second highest on the majority of variables, with exception to “difficulties establishing social interactions with suppliers and/or buyers”.

Hypothesis 6 was tested by investigating the mean scores of the marketing challenge variables for incubated and not incubated firms in each growth stage, which is demonstrated in figure 14 and figure 15. (for table format see appendix K).

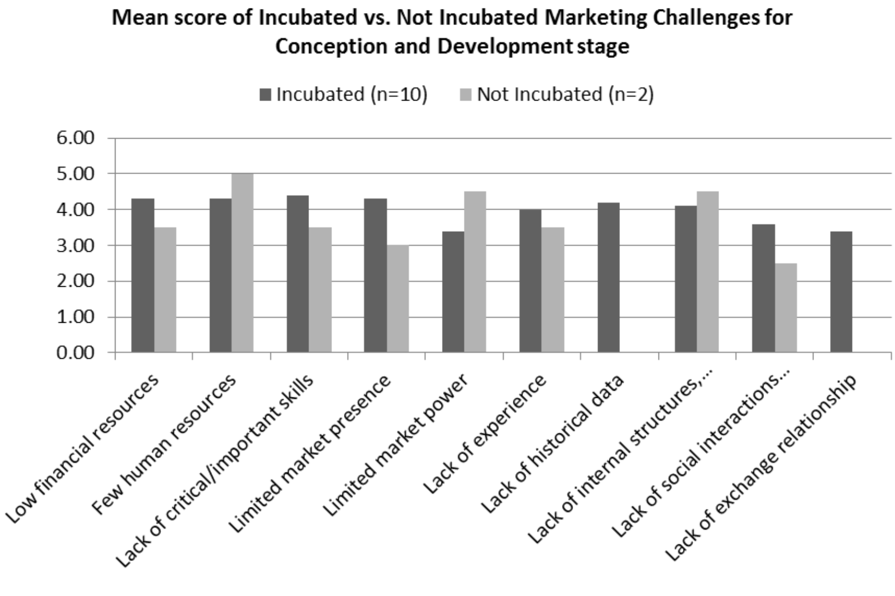


Figure 15: Mean score of incubated vs. not incubated: Conception and development stage

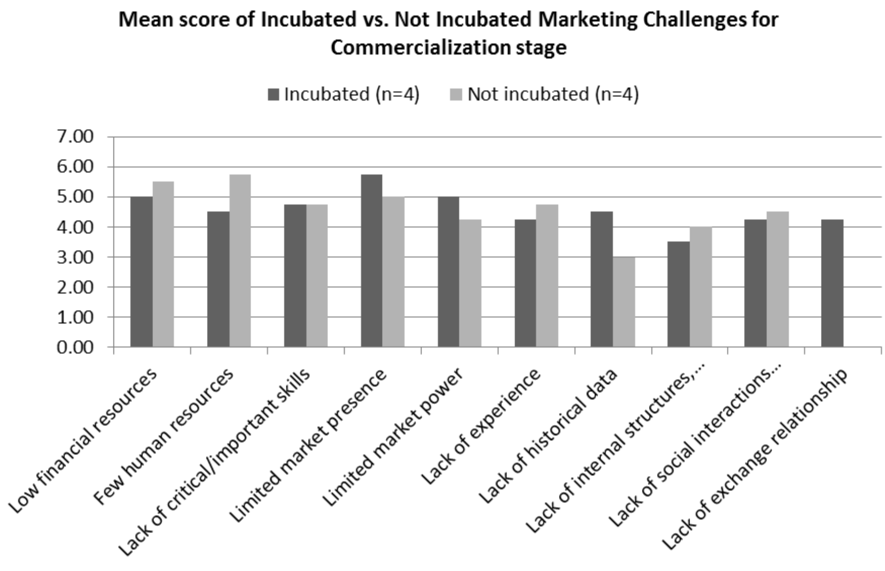


Figure 16: Mean score of incubated vs. not incubated: Commercialization stage

The results show that incubated firms in the conception and development stage have, in general, a higher mean score (lowest: 3.40, highest: 4.30) for the marketing variables, with exception to "few human resources", "limited market power", and "lack of internal structures, processes, and routines". In the commercialization stage the mean score for each variable was more or less shifting between incubated and not incubated with the lowest mean score of 3.5 and highest score of 5.75 for incubated firms, and lowest mean score of 3, and highest mean score of 5.75 for not incubated firms.

In order to test hypothesis 7 which states: The owner in all stage 1 firms is responsible for the marketing activities, the frequency of the "responsible for marketing" was assessed from the variable "marketing performer" which was measured on a nominal scale. The frequency can be obtained from figure 17 below.

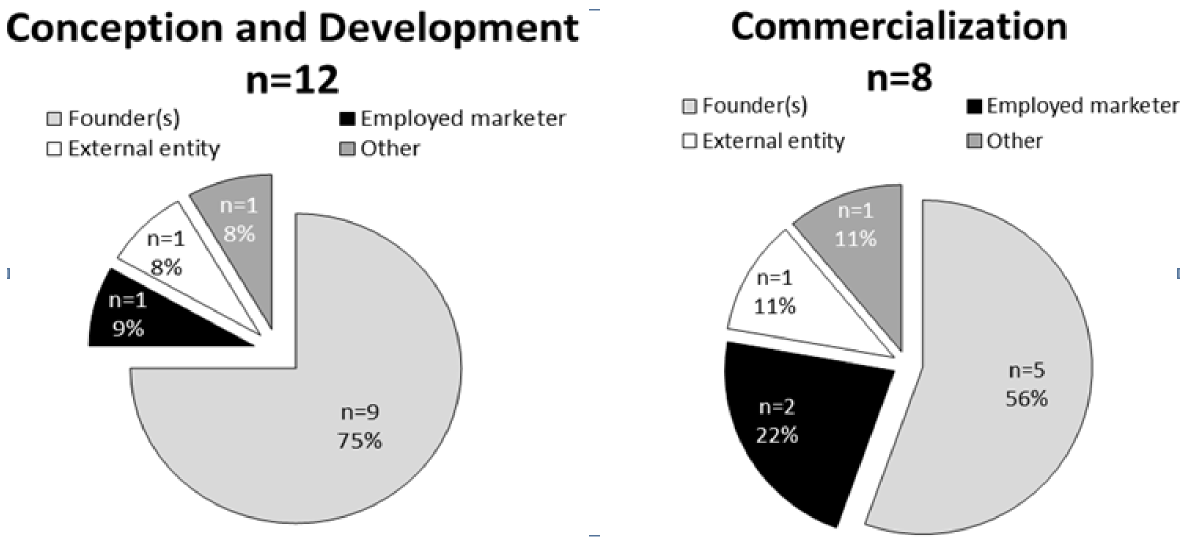


Figure 17: Distribution of marketing performer for each growth stage

In the conception and development stage, most startups from the sample (n=12) stated that the founder(s) were the ones responsible for the major marketing activities within their firms. The remaining startups within this stage of growth had either an external entity (n=1), employed marketer (n=1), or other (a business developer and a co-founder) responsible for their major marketing activities. Similar to the conception and development stage, most start-ups from the commercialization stage (n=5) reported their founder(s) to be the responsible for the major marketing activities within the firm. The rest had either, an employed marketer (n=2), an external entity (n=1), or other (Business Development Manager) employed for the marketing activities.

Testing hypothesis 8, which stated: start-ups with more financing sources will rate marketing challenges lower than start-ups with fewer financing sources, was obtained by first splitting the sample according to amount of finance sources and growth stage in which the mean score of the marketing challenges was calculated. The results can be obtained in table format in appendix K and in visual form in the figure 18 and figure 19 below.

In the conception and development stage, 1 case that used three types of finance source reported all marketing challenges of 7 showing that they were a major challenge. 3 cases reported using two types of finance sources. This group scored the lowest mean score for all marketing challenge variables, showing that these challenges are closer to a minor challenge than a major challenge. The last group contained 8 respondents. This group used two types of finance sources and had on average a score around 4 showing that these challenges were neither a major, nor a minor challenge, but somewhat of a challenge.

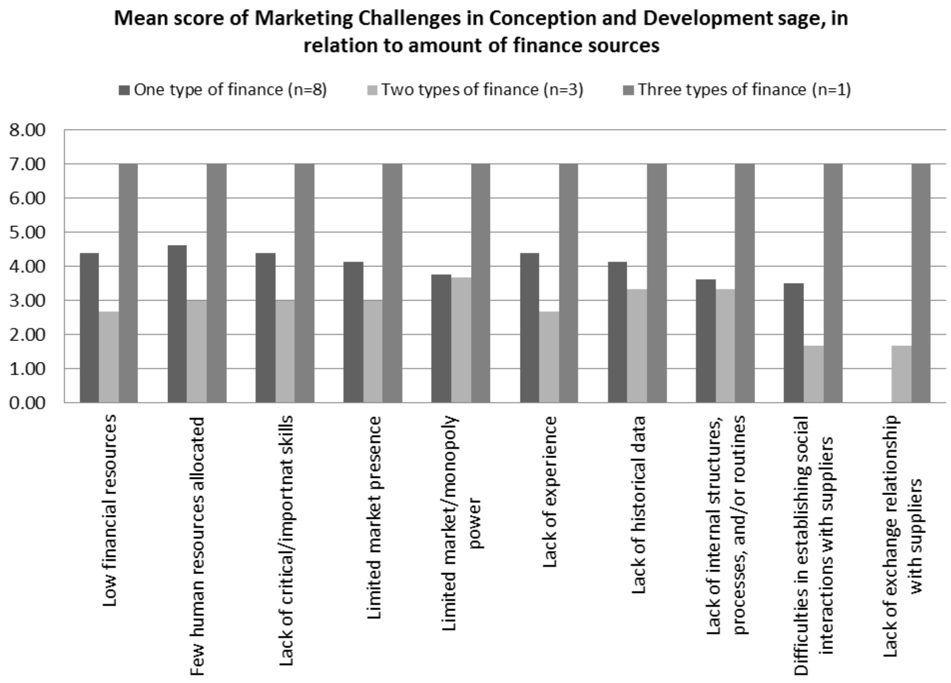


Figure 18: Mean score of marketing challenges: Finance source(s) in conception and development stage

In the commercialization stage (figure 19 below), none of the sample used more than two types of financing sources. Two groups were identified, one containing 4 respondents who used one type of financing source, and the other group of 4 respondents who used two types of financing sources. The group using one type of finance source indicated a higher mean score in general for the marketing variables, with exception to “lack of historical data for marketing”, “limited market presence”, and “limited market/monopoly power”.

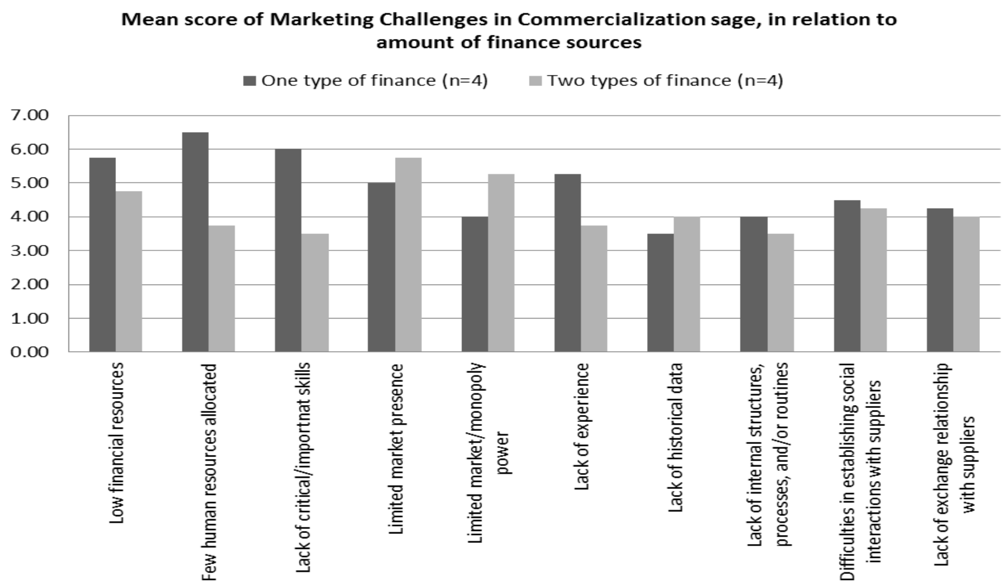


Figure 19: Mean score of marketing challenges: finance source(s) in commercialization stage

6 Discussion

This discussion is based on the findings from this study. An important limitation to consider is that of the sample size for each growth stage, which limits the ability to perform statistical relationship, correlation, and regressions tests (Brewerton and Millward, 2001). Furthermore it also limits the validity of the study in that the sample is not representative of the population.

In an attempt to identify marketing challenges to stages of growth, it would seem that marketing challenges, whether a minor or major challenge is a topic that will require further investigation, even though this paper might present an early attempt on this issue.

The results from this study show that the majority of start-ups from this sample are in the their early stages of development, and that they are far from all alike, but rather individually unique and heterogeneous (McKelvey and Aldrich, 1983) when considering their demographic characteristics. As such, one should question whether the organizational life cycle construct is useful for such population. Start-ups from this sample, whether in the conception and development stage, or in the commercialization stage, were of all ages and sizes similar to the findings of Birley (1987), which indicate that firms do not grow equally (Phelps et al. 2007). Whether growth is limited by the rate at which new employees can be obtained by the firm (Garnsey, 1998) or whether age is correlated to stages of growth (Van de Ven et al. 1984; Lippitt and Schmidt, 1967) would require a more deep through analysis of relationship and correlation testing.

Based on the mean score of each marketing challenge variable, the results show that marketing challenges become more of a challenge with growth, similar to the findings of Tybjee et al, (1983). More importantly these results can be compared to the findings of Kazanjian (1988) who found marketing problems to be rated higher in stage 2 than in stage 1, though he concluded that these problems were significantly more important in stage 3. Such trend could be explained by many reasons, such as the fact that start-ups in the conception and development stage tend to focus on product development rather than on commercializing their product, or by the findings from this study which show that the founder(s) are responsible for marketing activities for majority of these firms, thus there is over-reliance on the owner-manager’s marketing competency (Carson, 1985; Wilson, 1995). Though these results are not statistically significant in any respect, it could be of future interest to investigate such relationships.

When it comes to market served, the observations from this study show that start-ups serving the domestic, national market (Portugal), rate highest on marketing challenges, followed by start-ups serving both markets (national and international). This is the contrary of the findings of Ripolles and Blesa, (2011).

Whether incubation is a contributor to overcoming various marketing challenges is still of a question. The results here show that incubated start-ups in the conception and development stage rate marketing challenges related to low financial resources, lack of critical skills, limited market presence, lack of experience, lack of historical data, lack of social interactions, and lack of exchange relationships higher than start-ups that are not incubated. However, as these results have no explanatory power, they could as well indicate that challenges are variable and not sequential, and that each firm has unique problems (Garnsey, 1998; Phelps et al. 2007).

Concerning sources of finance, it seems that start-ups utilizing mainly one type of financial source tend to rate marketing challenges much higher in the conception and development stage, as well as in the commercialization stage with exception to limited market presence, limited market power, and lack of historical data. Such trend could be explained by the inability of acquiring marketing specialists (Davis et al. 1985; Oakey, 1991; Weinrauch et al. 1991), since start-ups in both stages rated “few human resources” as the highest challenge. This topic of course should also be further investigated.

7 Concluding remarks

7.1 Limitations of the study and future research

One can consider the results as vague in that the small sample size for this cross-sectional, descriptive study is very low, and thus question, whether it can generalize and represent the whole population of start-ups. With that said, many limitations arise from this study. Not only does the sample size for each growth stage limit the ability to perform statistical relationship, correlation, and regressions tests (Brewerton and Millward, 2001), but it also limits the validity of the study in that the sample is not representative of the population. Furthermore, the sample size *"must be big enough"* (Lenth, 2001: 187), in order for an effect to be of scientific significance, which in this case is not possible. Surveys sent through emails may have some drawbacks such as; it may be deemed as "junk mail" or "spam" and can thus be an explanation to the low response rate (Sills and Song, 2002).

Future research within this topic should aim at larger sample. This can be achieved by targeting populations outside of Portugal, and by extending the administration period for the survey. Furthermore, as no database on start-ups in Portugal was available, it limited the ability to perform a probability sampling which in statistics have a much higher generalizability, and unfortunately for this sampling, *"conclusions about the target population cannot be drawn from the findings"* (Brewerton and Millward, 2001: 120). However, a low response rate for specially mail and web surveys should not be of any surprise as these instruments have shown to decline in response rate (Sheehan, 2001).

The measurements used in this study influence the type of data collected. In this research a self-typing approach was used as opposed to a hypothetic-deductive approach. Future research should try to approach this research problem by experimenting through a hypothetic-deductive approach in order to examine whether structural dimensions differ between groups of start-ups, and whether these dimension can explain why specific marketing challenges arise.

This study only provides a cross-sectional view of the start-up firms in their current stage of growth. Future research should attempt to examine the growth through longitudinal research. Only then will we be able to examine whether marketing challenges changes according to stage of growth.

7.2 Conclusion

Even though we have not found any evidence for our hypotheses, this research indicates that age and size seem not to be determinants of stage of growth since start-ups of all ages and sizes are dispersed alongside the organizational life cycle's contextual dimensions. It seems that all the marketing challenges examined in this study are present in both stages of growth in start-up firms, with variability in degree of challenge, mostly of "somewhat of a challenge". However, start-ups in the commercialization stage seem to rate multiple marketing challenges higher than those start-ups in the conception and development stage. Incubation for start-ups in the conception and development stage seem not to lesser the degree of challenge, while sources of finance could be an indicator of the degree of challenge for start-ups for both conception and development stage and commercialization stage. Furthermore, start-ups serving the domestic or national market, rate highest on marketing challenges, followed by start-ups serving both markets. The study was limited by the size of the sample in which no affirmations can be made, and so a great work remains to be done.

List of references and bibliography

Abernathy, W. J.; Utterback, J. M. (1978). "Patterns of industrial innovation". *Technology review*, 64(7): 254-228.

Aldrich, H.; Auster, E. R. (1986). "Even dwarfs started small: Liabilities of age and size and their strategic implications". *Research in organizational behavior*, 8(1986): 165-186.

American Marketing Association. (2013). "Definition of Marketing". Retrieved May 25, 2016 from https://www.ama.org/AboutAMA/Pages/Definition-of-Marketing.aspx.

Becherer, R. C. (1993). "New business venture credibility: relevant dimensions". *Hills, Gerald E./LaForge, Raymond W./Muzyka, Daniel F*, 114-129.

Birley, S. (1987). "New ventures and employment growth". *Journal of Business Venturing*, 2(2): 155-165.

Block, Z.; MacMillan, I. C. (1985). "Milestones for successful venture planning". *Harvard Business Review*, 63(5): 184.

Boag, D. A. (1987). "Marketing control and performance in early-growth companies". *Journal of Business Venturing*, 2(4): 365-379.

Bøllingtoft, A.; Ulhøi, J. P. (2005). "The networked business incubator—leveraging entrepreneurial agency?". *Journal of business venturing*, 20(2): 265-290.

Boone, H. N.; Boone, D. A. (2012). "Analyzing likert data". *Journal of extension*, 50(2): 1-5.

Borden, N. H. (1964). "The concept of the marketing mix". *Journal of advertising research*, 4(2): 2-7.

Brewerton, P. M.; Millward, L. J. (2001). *Organizational Research Methods: A Guide for Students and Researchers*. London. Sage Publications.

Brush, C. G.; Greene, P. G.; Hart, M. M. (2001). "From initial idea to unique advantage: The entrepreneurial challenge of constructing a resource base". *The academy of management executive*, 15(1): 64-78.

Cambridge Dictionary. (2016). "Meaning of "challenge" in the English Dictionary". Retrieved July 22, 2016, from http://dictionary.cambridge.org/dictionary/english/challenge.

Cameron, K. S.; Whetten, D. A. (1981). "Perceptions of organizational effectiveness over organizational life cycles". *Administrative Science Quarterly*, 26(4): 525-544.

Carland, J. W.; Hoy, F., Boulton, W. R.; Carland, J. A. C. (1984). "Differentiating entrepreneurs from small business owners: A conceptualization". *Academy of management review*, 9(2): 354-359.

Carpenter, R. E.; Petersen, B. C. (2002). "Is the growth of small firms constrained by internal finance?". *Review of Economics and statistics*, 84(2): 298-309.

Carson, D. (1990). "Some exploratory models for assessing small firms' marketing performance (a qualitative approach)". *European journal of marketing*, 24(11): 8-51.

Carson, D. J. (1985). "The evolution of marketing in small firms". *European Journal of Marketing*, 19(5): 7-16.

Carson, D.; Cromie, S.; McGowan, P.; Hill, J. (1995). *Marketing And Entrepreneurship In SMEs: An Innovative Approach*. Harlow. Pearson Education.

Chan, K. F.; Lau, T. (2005). “Assessing technology incubator programs in the science park: the good, the bad and the ugly”. *Technovation*, 25(10): 1215-1228.

Chandler, A. D. (1962). *Strategy and Structures: Chapters in the History of the American Enterprise.* Massachusetts Institute of Technology Cambridge.

Chen, X.; Zou, H.; Wang, D. T. (2009). “How do new ventures grow? Firm capabilities, growth strategies and performance”. *International Journal of Research in Marketing*, 26(4): 294-303.

Child, J. (1972). “Organizational structure, environment and performance: The role of strategic choice”. *sociology*, 6(1): 1-22.

Couper, M. P. (2000). “Review: Web surveys: A review of issues and approaches”. *The Public Opinion Quarterly*, 64(4): 464-494.

Cromie, S. (1994). “Entrepreneurship: The role of the individual in small business development”. *Irish Journal of Management*, 15: 62.

Davidsson, P.; Achtenhagen, L.; Naldi, L. (2005). “Research on small firm growth: A review” (ID: 2072).In *European Institute of Small Business*. From eprints.qut.edu.au/2072.

Davidsson, P.; Kirchhoff, B.; Hatemi–J, A.; Gustavsson, H. (2002). “Empirical analysis of business growth factors using Swedish data”. *Journal of small business management*, 40(4): 332-349.

Davidsson, P.; Wiklund, J. (2006). “3. Conceptual and empirical challenges in the study of firm growth”. *Entrepreneurship and the Growth of Firms*, 1: 39-61.

Davila, A.; Foster, G.; Gupta, M. (2003). “Venture capital financing and the growth of startup firms”. *Journal of business venturing*, 18(6): 689-708.

Davis, C. D.; Hills, G. E.; LaForge, R. W. (1985). “The marketing/small enterprise paradox: a research agenda”. *International Small Business Journal*, 3(3): 31-42.

Day, G. (1999). “Aligning organizational structure to the market”. *Business Strategy Review*, 10(3): 33-46.

Deakins, D.; Whittam, G. (2000). “Business start-up: theory, practice and policy”. *Enterprise and Small Business: Principles, Practice and Policy. Financial Times Prentice-Hall*, London.

Dillman, D. A.; Bowker, D. K. (2001). “The web questionnaire challenge to survey methodologists”. *Online social sciences*, 53-71.

Dobbs, M.; Hamilton, R. T. (2007). ”Small business growth: recent evidence and new directions”. *International journal of entrepreneurial behavior & research*, 13(5): 296-322.

Dodge, H. R.; Fullerton, S.; Robbins, J. E. (1994). “Stage of the organizational life cycle and competition as mediators of problem perception for small businesses”. *Strategic management journal*, 15(2): 121-134.

Dodge, H. R.; Robbins, J. E. (1992). “An empirical investigation of the organizational life cycle”. *Journal of small business management*, 30(1): 27.

Drazin, R.; Kazanjian, R. K. (1990). “A reanalysis of Miller and Friesen's life cycle data”. *Strategic management journal*, 11(4): 319-325.

Duening, T. N.; Hisrich, R. A.; Lechter, M. A. (2015). *Technology Entrepreneurship: Taking Innovation to the Marketplace (2nd edition)*. USA. Academic Press.

Evans, D. S. (1987). "Tests of alternative theories of firm growth". *Journal of political economy*, 95(4): 657-674.

Felton, A. P. (1959). "Making the marketing concept work". *Harvard Business Review*, 37(4): 55-65.

Freeman, J.; Carroll, G. R.; Hannan, M. T. (1983). "The liability of newness: Age dependence in organizational death rates". *American sociological review*, 48(5): 692-710.

Garnsey, E. (1998). "A theory of the early growth of the firm". *Industrial and corporate change*, 7(3): 523-556.

Garnsey, E.; Stam, E.; Heffernan, P. (2006). "New firm growth: Exploring processes and paths". *Industry and Innovation*, 13(1): 1-20.

Gilmore, A.; Carson, D.; Grant, K. (2001). "SME marketing in practice". *Marketing intelligence & planning*, 19(1): 6-11.

Gompers, P.; Lerner, J. (2001). "The venture capital revolution". *The journal of economic perspectives*, 15(2): 145-168.

Greiner, L. E. (1972). "Evolution and Revolution as Organizations Grow". *Harvard Business Review*, 50(4): 37-46.

Grönroos, C. (1989). "Defining marketing: a market-oriented approach". *European journal of marketing*, 23(1): 52-60.

Gruber, M. (2003). "Research on marketing in emerging firms: key issues and open questions". *International journal of technology management*, 26(5-6): 600-620.

Gruber, M. (2004). "Marketing in new ventures: theory and empirical evidence". *Schmalenbach business review*, 56, 164-199.

Hall. R. H. (1996). *Organizations: Structures, Processes, and Outcomes*. Prentice Hall, Inc, Englewood Cliffs, New Jersey.

Hammond, S. (2000). "Using psychometric tests. Research methods in psychology", 175-193. In: Brewerton, P. M., & Millward, L. J. (2001). *Organizational Research Methods: A Guide for Students and Researchers*. London. Sage Publications.

Hanks, S. (1990). "An empirical examination of the organizational life cycle in high technology firms". (Doctoral Dissertation). University of Utah, Salt Lake City, UT.

Hanks, S. H. (2015). "The organization life cycle: Integrating content and process". *Journal of Small Business Strategy*, 1(1): 1-12.

Hanks, S. H.; Watson, C. J.; Jansen, E.; Chandler, G. N. (1993). "Tightening the life-cycle construct: A taxonomic study of growth stage configurations in high-technology organizations". *Entrepreneurship: Theory and Practice*, 18(2): 5-30.

Hannan, M. T.; Freeman, J. (1984). "Structural inertia and organizational change". *American sociological review*, 49(2): 149-164.

Hill, J.; Nancarrow, C.; Tiu Wright, L. (2002). "Lifecycles and crisis points in SMEs: a case approach". *Marketing Intelligence & Planning*, 20(6): 361-369.

Hill, J.; Wright, L. T. (2000). "Defining the scope of entrepreneurial marketing: a qualitative approach". *Journal of Enterprising Culture,* 8(01): 23-46.

Hills, G. E.; LaForge, R. W. (1992). "Research at marketing interface to advance entrepreneurship theory". *Entrepreneurship: Theory and Practice*, 16(3): 33-60.

Hite, J. M.; Hesterly, W. S. (2001). "The evolution of firm networks: From emergence to early growth of the firm". *Strategic management journal*, 22(3): 275-286.

Ibrahim, A. B.; Goodwin, J. R. (1986). "Perceived causes of success in small business". *American journal of small business*, 11(2): 41-50.

Jawahar, I. M.; McLaughlin, G. L. (2001). "Toward a descriptive stakeholder theory: An organizational life cycle approach". *Academy of management review*, 26(3): 397-414.

Katila, R.; Chen, E. L.; Piezunka, H. (2012). "All the right moves: How entrepreneurial firms compete effectively". *Strategic Entrepreneurship Journal*, 6(2), 116-132.

Kazanjian, R. K. (1988). "Relation of dominant problems to stages of growth in technology-based new ventures". *Academy of Management journal*, 31(2): 257-279.

Kimberly, J. R.; Kimberly, J.; Miles, R. H. (1980). The Organizational Life Cycle: Issues in the Creation, Transformation, and Decline of Organizations. San Francisco. Jossey-Bass Inc Pub.

Kothari, C. R. (2004). Research Methodology: Methods and Techniques. New Delhi. New Age International.

Kotler, P.; Keller, K.L. (2014). Marketing Management 14/e. New Jersey. Prentice Hall.

Landau, S.; Everitt, B. (2004). A Handbook of Statistical Analyses Using SPSS (Vol. 1). Boca Raton, Florida. Chapman & Hall/CRC.

Lee, C.; Lee, K.; Pennings, J. M. (2001). "Internal capabilities, external networks, and performance: a study on technology-based ventures". *Strategic management journal*, 22(6-7): 615-640.

Leiner, D. J. (2015). SoSci Survey (Version 2.6.00-i) [Computer software]. Available at http://www.soscisurvey.com

Lenth, R. V. (2001). "Some practical guidelines for effective sample size determination". *The American Statistician*, 55(3): 187-193.

Lester, D. L.; Parnell, J. A.; Carraher, S. (2003). "Organizational life cycle: A five-stage empirical scale". *The International Journal of Organizational Analysis*, 11(4): 339-354.

Lewis, V. L.; Churchill, N. C. (1983). "The five stages of small business growth". *Harvard business review*, 61(3): 30-50.

Lichtenstein, B. M. B.; Brush, C. G. (2001). "How do" resource bundles" develop and change in new ventures? A dynamic model and longitudinal exploration". *Entrepreneurship: Theory and Practice,* 25(3): 37-37.

Lippitt, G. L.; Schmidt, W. H. (1967). "Crises in a developing organization". Harvard Business Review. 46(6): 102-112.

MacMillian Dictionary. (2016). "Challenge - definition and synonyms". Retrieved July 22, 2016, from http://www.macmillandictionary.com/dictionary/british/challenge_1.

Malhotra, N.; Birks, D. (2006). *Marketing Research: An Applied Perspective*. . New Jersey: Pearson Education Ltd

Man, T. W.; Lau, T.; Chan, K. F. (2002). "The competitiveness of small and medium enterprises: A conceptualization with focus on entrepreneurial competencies". *Journal of business venturing*, 17(2): 123-142.

Mata, J. (1994). "Firm growth during infancy". *Small Business Economics*, 6(1): 27-39.

McGrath, R. G. (1996). Options and the entrepreneur: Toward a strategic theory of entrepreneurial behavior. Working Paper. Columbia University, New York. In Volkmann, C. K.; Tokarski, K. O.; Grünhagen, M. (2010). Entrepreneurship in a European Perspective: Concepts for the Creation and Growth of New Ventures. Springer Science & Business Media.

McKelvey, B.; Aldrich, H. (1983). "Populations, natural selection, and applied organizational science". *Administrative Science Quarterly*, 28(1): 101-128.

Miller, D. (1984). Organizations: A quantum view. Prentice Hall. In Hanks, S. H. (2015). "The organization life cycle: Integrating content and process". *Journal of Small Business Strategy*, 1(1): 1-12.

Miller, D.; Friesen, P. H. (1983). "Successful and unsuccessful phases of the corporate life cycle". *Organization studies*, 4(4): 339-356.

Miller, D.; Friesen, P. H. (1984). "A longitudinal study of the corporate life cycle". *Management science*, 30(10): 1161-1183.

Mintzberg, H. (1980). "Structure in 5's: A Synthesis of the Research on Organization Design". *Management science*, 26(3): 322-341.

Mintzberg, H.; Waters, J. A. (1982). "Tracking strategy in an entrepreneurial firm1". *Academy of management journal*, 25(3): 465-499.

Moira, J, B. (2016). *Practical Tips for Facilitating Research*. London. Facet Publishing

Nelson, R. R.; Winter, S. G. (1977). "In search of useful theory of innovation". *Research policy*, 6(1): 36-76.

Nobel, C. (2013)." Teaching a'Lean Startup'Strategy". *Harvard Business School*. Retrieved April 16, 2016, from http://hbswk.hbs.edu/item/teaching-a-lean-startup-strategy.

Oakey, R. (1991). "Innovation and the management of marketing in high technology small firms". *Journal of Marketing Management*, 7(4): 343-356.

O'Farrell, P. N.; Hitchens, D. M. (1988). "Alternative theories of small-firm growth: a critical review". *Environment and Planning A*, 20(10): 1365-1383.

Payne, S.L. (1951). *The Art of Asking Questions. Princeton*, NJ: Princeton University Press. In Hunt, S. D.; Sparkman Jr, R. D.; Wilcox, J. B. (1982). "The pretest in survey research: Issues and preliminary findings". *Journal of Marketing Research*, 19(2): 269-273.

Penrose, E. T. (1995). "The theory of the growth of the firm, 1959". Cambridge, MA. In Garnsey, E.; Stam, E.; Heffernan, P. (2006). "New firm growth: Exploring processes and paths". *Industry and Innovation*, 13(1): 1-20.

Perrow, C. (1967). "A framework for the comparative analysis of organizations". *American sociological review*, 32(2): 194-208.

Peters, L.; Rice, M.; Sundararajan, M. (2004). “The role of incubators in the entrepreneurial process”. *The Journal of Technology Transfer*, 29(1): 83-91.

Petkova, A. P.; Rindova, V. P.; Gupta, A. K. (2008). “How can new ventures build reputation? An exploratory study”. *Corporate Reputation Review*, 11(4): 320-334.

Phelps, R.; Adams, R.; Bessant, J. (2007). “Life cycles of growing organizations: A review with implications for knowledge and learning”. *International Journal of Management Reviews,* 9(1): 1-30.

Pinsonneault, A.; Kraemer, K. (1993). “Survey research methodology in management information systems: an assessment”. *Journal of management information systems,* 10(2): 75-105.

Pugh, D. S.; Hickson, D. J.; Hinings, C. R. (1969). “An empirical taxonomy of structures of work organizations”. *Administrative Science Quarterly*, 14(1): 115-126.

Quinn, R. E.; Cameron, K. (1983). “Organizational life cycles and shifting criteria of effectiveness: Some preliminary evidence”. *Management science*, 29(1): 33-51.

Ranson, S.; Hinings, B.; Greenwood, R. (1980). “The structuring of organizational structures”. *Administrative science quarterly*, 25(1): 1-17.

Ripollés, M.; Blesa, A. (2012). “International new ventures as “small multinationals”: The importance of marketing capabilities”. *Journal of World Business*, 47(2): 277-287.

Robertson, T. S.; Gatignon, H. (1986). “Competitive effects on technology diffusion”. *The Journal of Marketing*, 50(2): 1-12.

Rode, V.; Vallaster, C. (2005). “Corporate branding for start-ups: the crucial role of entrepreneurs”. *Corporate Reputation Review*, 8(2): 121-135.

Romanelli, E. (1989). “Environments and strategies of organization start-up: Effects on early survival”. *Administrative Science Quarterly*, 34(3): 369-387.

Romano, C.; Ratnatunga, J. (1995). “The role of marketing: its impact on small enterprise research”. *European journal of marketing*, 29(7): 9-30.

Schmeisser, W.; Krimphove, D.; Grothe, J. (2001). “Zwischen Gründungsmanagement und Neuem Markt: Eine pragmatische Einführung”. In Rode, V.; Vallaster, C. (2005). “Corporate branding for start-ups: the crucial role of entrepreneurs”. *Corporate Reputation Review,* 8(2): 121-135.

Schoonhoven, C. B.; Eisenhardt, K. M.; Lyman, K. (1990). ”Speeding products to market: Waiting time to first product introduction in new firms”. *Administrative Science Quarterly*, 35(1): 177-207.

Scott, M.; Bruce, R. (1987). “Five stages of growth in small business”. *Long range planning*, 20(3): 45-52.

Sheehan, K. B. (2001). “E-mail survey response rates: A review”. *Journal of Computer‐Mediated Communication*, 6(2): 0-0.

Shelton, L. M. (2005). “Scale barriers and growth opportunities: A resource-based model of new venture expansion”. *Journal of enterprising culture*, 13(04): 333-357.

Shim, S.; Eastlick, M. A.; Lotz, S. (2000). “Examination of US Hispanic-owned, small retail and service businesses: an organizational life cycle approach”. *Journal of Retailing and Consumer Services*, 7(1): 19-32.

Sills, S. J.; Song, C. (2002). “Innovations in survey research an application of web-based surveys”. *Social science computer review*, 20(1): 22-30.

Singh, J. V.; Tucker, D. J.; House, R. J. (1986). “Organizational legitimacy and the liability of newness”. *Administrative science quarterly,* 31(2): 171-193.

Smith, K. G.; Mitchell, T. R.; Summer, C. E. (1985). “Top level management priorities in different stages of the organizational life cycle”. *Academy of management Journal*, 28(4): 799-820.

Snow, C. C.; Hambrick, D. C. (1980). “Measuring organizational strategies: Some theoretical and methodological problems”. *Academy of Management Review*, 5(4): 527-538.

Snow, C. C.; Hrebiniak, L. G. (1980). “Strategy, distinctive competence, and organizational performance”. *Administrative Science Quarterly*, 25(2): 317-336.

Starr, J. A.; MacMillan, I. C. (1990). ”Resource cooptation via social contracting: Resource acquisition strategies for new ventures”. *Strategic Management Journal*, 11(4): 79-92.

Steinmetz, L. L. (1969). “Critical stages of small business growth: When they occur and how to survive them”. *Business horizons*, 12(1): 29-36.

Stinchcombe, A. L.; March, J. G. (1965). “Social structure and organizations”. *Advances in strategic management,* 17: 229-259.

Stokes, D. (2000). “Putting entrepreneurship into marketing: the processes of entrepreneurial marketing”. *Journal of research in marketing and entrepreneurship*, 2(1): 1-16.

Stokes, D. (2002). "Entrepreneurial marketing in the public sector: the lessons of headteachers as entrepreneurs". *Journal of Marketing Management*, 18(3-4): 397-413.

Stubbart, C. I.; Smalley, R. D. (1999). “The deceptive allure of stage models of strategic processes”. *Journal of Management Inquiry*, 8(3): 273-286.

Tanur, J. M. (1983). “Methods for large-scale surveys and experiments”. *Sociological methodology*, 14(1983-1984): 1-71.

Timmons, J. A.; Smollen, L. E.; Dingee, A. L. (1977). “New venture creation: A guide to small business development (Vol. 1)”. Homewood. Irwin Professional Publishing.

Tushman, M. "Managing Innovation Over the Product Life Cycle." In Reading in the Management of Innovation, edited by Moore,W.; Tushman, M. Marshfield, MA: Pitman Publishing.

Tyebjee, T. T.; Bruno, A. V.; McIntyre, S. H. (1983). “Growing ventures can anticipate marketing stages”. *Harvard Business Review*, 61(1): 62.

Van de Ven, A. H.; Hudson, R.; Schroeder, D. M. (1984). ”Designing new business startups: Entrepreneurial, organizational, and ecological considerations”. *Journal of management,* 10(1): 87-108.

Van de Ven, A. H.; Poole, M. S. (1995).”Explaining development and change in organizations”. *Academy of management review*, 20(3): 510-540.

Van Gelderen, M.; Thurik, R.; Bosma, N. (2005). ”Success and risk factors in the pre-startup phase”. *Small Business Economics*, 24(4): 365-380.

Washington. Beard Books.

Webster Jr, F. E. (1992). "The changing role of marketing in the corporation". *The Journal of Marketing*, 56(4): 1-17.

Weinrauch, J. D.; Mann, O. K.; Robinson, P. A.; Pharr, J. (1991). “Dealing with limited financial resources: A marketing challenge for small business”. *Journal of Small Business Management*, 29(4): 44-54.

Wilson, L. (1995). “Occupational standards for small firms”. *Executive Development*, 8(6): 18-20.

Winborg, J.; Landström, H. (2001). “Financial bootstrapping in small businesses: Examining small business managers' resource acquisition behaviors”. *Journal of business venturing*, 16(3): 235-254.

Zahra, S. A. (2005). “A theory of international new ventures: a decade of research”. *Journal of International Business Studies*, 36(1): 20-28.

Appendix A: Methodological considerations from past life cycle studies

Researcher(s)	Instruments	Period:	Respondents:	Sample size (N)	Firm type:
Mintzberg and Waters (1982)	Company histories	1917-1974	n.a.	N =1	Entrepreneurial company
Miller and Friesen, (1983; 1984)	Company histories, Secondary data, Questionnaires	n.a.	n.a.	N =36	Corporations (at least 20 years of existence)
Smith et al. (1985)	Questionnaire	n.a.	CEOs and Managers	N =27	Electronic manufacturing firms
Lewis and Churchill, (1987)	Questionnaires	n.a.	Owners/Managers	N =83	Companies
Kazanjian, (1988)	Questionnaires (Self-categorization)	Late 1982	CEOs	N =105	Technology based new ventures
Dodge and Robbins, (1992)	Case reports	1977 - 1989	Owners/Managers	N= 364	Small Business Institutes (Service companies, retailers, distributors, manufacturers', sports-recreational, real estate, insurance firms)
Hanks et al. (1993)	Questionnaires (Descriptive variables)	1988 (summer and spring)	CEOs	N =275	High-tech companies (Computer software, electronic and communications equipment, chemicals, pharmaceuticals, aerospace equipment, lasers and optics, analytical and measuring devices)
Dodge et al. (1994)	Case reports	1977 - 1990	Owners/Managers	N= 645	Small Businesses (Service firms, retailers, distributors, manufacturers, processors)
Lester et al. (2003)	Questionnaires	n.a.	Managers	N =242	Variety of industries

Appendix B: Overview of scale, measurements, and data type of items

Items	Measurement Scale	Variable Type	Values
Growth Stage	Ordinal	Ordinal	1 = Stage 1, 2= Stage 2, 3= Stage 3, 4= Stage 4
Incubated	Dichotomous	Categorical	1= Incubated, 2= Not incubated
Market Served	Nominal	Categorical	1 = National Market, 2 = International market
Industry Sector	Nominal	Categorical	1= B2B, 2=B2C, 3= B2B2C, 4=C2C2B, 5=B2G
Product Category	Nominal	Categorical	1= Product, 2= Service
Age	Ratio	Continuous	Open
Size (Employees)	Ratio	Continuous	Open
Marketing Performer	Nominal	Categorical	1= Founder, 2= Employed marketer, 3= External entity, 4= Other
Source of Finance - Owner(s), Finance, Venture Capital, Retained earnings, Trade and other creditors, Bank and financial institutions	Dichotomous	Binary	1= Yes, 2= No
Modes of Communication - Advertising, Events and experiences, Direct marketing, Word-of-mouth marketing, Sales promotions, Public relations and publicity, Interactive marketing, Personal selling	Dichotomous	Binary	1= Using, 2= Not using
Marketing Challenges **- Smallness** - Low financial resources - Few human resources - Lack of critical/important skills - Limited market presence - Limited market/monopoly power **- Newness** - Lack of experience - Lack of historical data - Lack of internal structures... - Difficulties establishing social interactions with suppliers - Lack of exchange relationship with suppliers	Ordinal	Ordinal	1= a Minor Challenge, 4= Somewhat of a Challenge, 7= a Major Challenge

Appendix C: Section 1 of survey (Growth Stage)

U.PORTO

FEUP FACULDADE DE ENGENHARIA UNIVERSIDADE DO PORTO

FEP FACULDADE DE ECONOMIA UNIVERSIDADE DO PORTO

MIETE MESTRADO EM INOVAÇÃO E EMPREENDEDORISMO TECNOLÓGICO

20% completed

1. Please select one of the following descriptions that most closely matches your company

If you doubt between two alternatives, select the description that is most probable.

- ◯ Our activities are primarily focused on product development and design, securing adequate financial resources and developing a market. We, within this company, perform multiple tasks, mostly technical tasks, thus we could be considered as generalists rather than specialists. We more closely resemble a task group than an organization. Formality and procedures are almost non-existent at this firm, but the entrepreneur is central to all functions and communications.
- ◯ Our company has a product that performs well and meets a need in the marketplace. We have the capability to produce and sell but we have yet to firmly establish the company in the market. The entrepreneur is central to all functions and communications. The firm has some revenues and some backlog of orders.
- ◯ Our company is characterized by high growth rates in both sales and number of employees. The major internal focus is around issues of how to produce, sell and distribute the products/service in volume while attaining profitability. Internal structure and communication is becoming more formal and increasingly individuals are assuming specialists roles. The company has a single product line.
- ◯ Our major internal activities include: (a) development of 2nd, 3rd generation products and/or totally new product lines; (b) securing growth funding; (c) securing or growing market share; (d) penetrating new geographic territories. Our firm has a formality of organization structure, rules and procedures. A top management team composed of individuals with broad industry experience is in place of being built.

Appendix D: Section 2 of survey (Marketing Challenges)

40% completed

Marketing Challenges

Please indicate on a scale from 1 to 7, how much of a challenge the following marketing challenges are to your company and its current situation.
Where: 1 = A minor challenge, 4 = somewhat of a challenge, and 7= a major challenge.

2. Please indicate how much of a challenge the following marketing challenges are to your company and its current situation.

On a scale from 1 to 7 (1= a minor challenge, 4= somewhat of a challenge, and 7= a major challenge)

	A minor challenge			Somewhat of a challenge			A major challenge
Low financial resources available for marketing is currently...	○	○	○	○	○	○	○
Few human resources allocated to marketing areas is currently...	○	○	○	○	○	○	○
Lack of critical/importnat skills in marketing is currently...	○	○	○	○	○	○	○
Limited market presence is currently...	○	○	○	○	○	○	○
Limited market/monopoly power which gives us disadvantage in negotiations is currently...	○	○	○	○	○	○	○

3. Please indicate how much of a challenge the following marketing challenges are to your company and its current situation.

On a scale from 1 to 7 (1= a minor challenge, 4= somewhat of a challenge, and 7= a major challenge)

	A minor challenge			Somewhat of a challenge			A major challenge
Lack of experience in marketing is currently...	○	○	○	○	○	○	○
Lack of historical data for marketing is currently...	○	○	○	○	○	○	○
Lack of internal structures, processes, and/or routines in marketing is currently...	○	○	○	○	○	○	○
Difficulties in establishing social interactions with suppliers and/or buyers is currently...	○	○	○	○	○	○	○
Lack of exchange relationship with suppliers is currently...	○	○	○	○	○	○	○

Appendix E: Section 3 of survey (Marketing Communications)

60% completed

Marketing Communications

In this section we ask you to provide few information about the marketing communications within your company.

4. Who is currently performing the major marketing activities within your company?

The responsible for marketing. If a mix or combination of the alternatives, please select the one most influential.

- ◯ Founder(s)
- ◯ Employed marketer (an employee dedicated to marketing)
- ◯ External entity (an entity/person external to the company)
- ◯ Other ______ max. 35 characters

5. Which marketing media/medium do you make use of? (multiple choice)

Traditional medium = printed material, broadcasting etc.

Online medium = marketing activities performed online

- ☐ Traditional medium
- ☐ Online medium

6. Which of the following marketing communication modes do you make use of?

Multiple choice question

Advertising
- ☐ e.g. newspaper ads, tv ads, outdoor ads, online display ads

Sales promotions
- ☐ e.g. contests, premiums and gifts, exhibits, coupons and rebates

Event and experiences
- ☐ e.g. festivals, street activities, webinars

Public relations and publicity
- ☐ e.g. speeches, seminars, charitable donations, community relations

Direct marketing
- ☐ e.g. telemarketing, mailings, e-mails

Interactive marketing
- ☐ e.g. forums, web sites, company blogs, social media

Word-of-mouth marketing
- ☐ e.g. person-to-person, chat rooms, third party blogs, third party social media

Personal selling
- ☐ e.g. sales representation, sales meetings, fairs and trade shows

Appendix F: Section 4 of survey (Company Demographics)

80% completed

Company Demographics

You have reached the last section. Here we kindly ask you to provide a few details about your company (company demographics).

7. Please state whether your company is incubated or not

If you were previously incubated, please select "not incubated"

◯ Incubated ◯ Not incubated

8. In which year was your current company founded?

In whole year (e.g. 2002, 2010). Only 4 digits allowed.

9. How many employees are currently working in the company?

In whole numbers (e.g. 2, 43). Including the founder. Excluding interns

10. Your company offerings are primarily aimed at

If your offerings are a mix or combination of the alternatives provided, please select the most important to your offerings

◯ Business to Business (B2B) - commercial transaction with another business

◯ Business-to-Business-to-Consumer (B2B2C) - combination of Business-to-Business (B2B) and Business-to-Consumer (B2C) for a complete product or service transaction

◯ Business to Consumer (B2C) - commercial transaction directly to consumers (end-users)

◯ Consumer-to-Business-to-Consumer (C2C2B) - intermediary between two consumers who

11. Geographically speaking, which market(s) do you currently serve?

Multiple choice question

☐ National market - Portugal

☐ International market - market(s) outside of Portugal

12. Our primary offering(s) belong in the following category

If your company offerings are a mix or combination of the alternatives, please select the most important to your core/main business activities.

◯ Product(s) - tangible(physical) and visible items

◯ Service(s) - intangible benefits

13. What are the company's current major source(s) of finance?

Multiple choice question

☐ Owner(s)

☐ Retained earnings

☐ Friends and relatives

☐ Trade and other creditors

☐ Venture Capital (VC)

☐ Banks and financial institutions

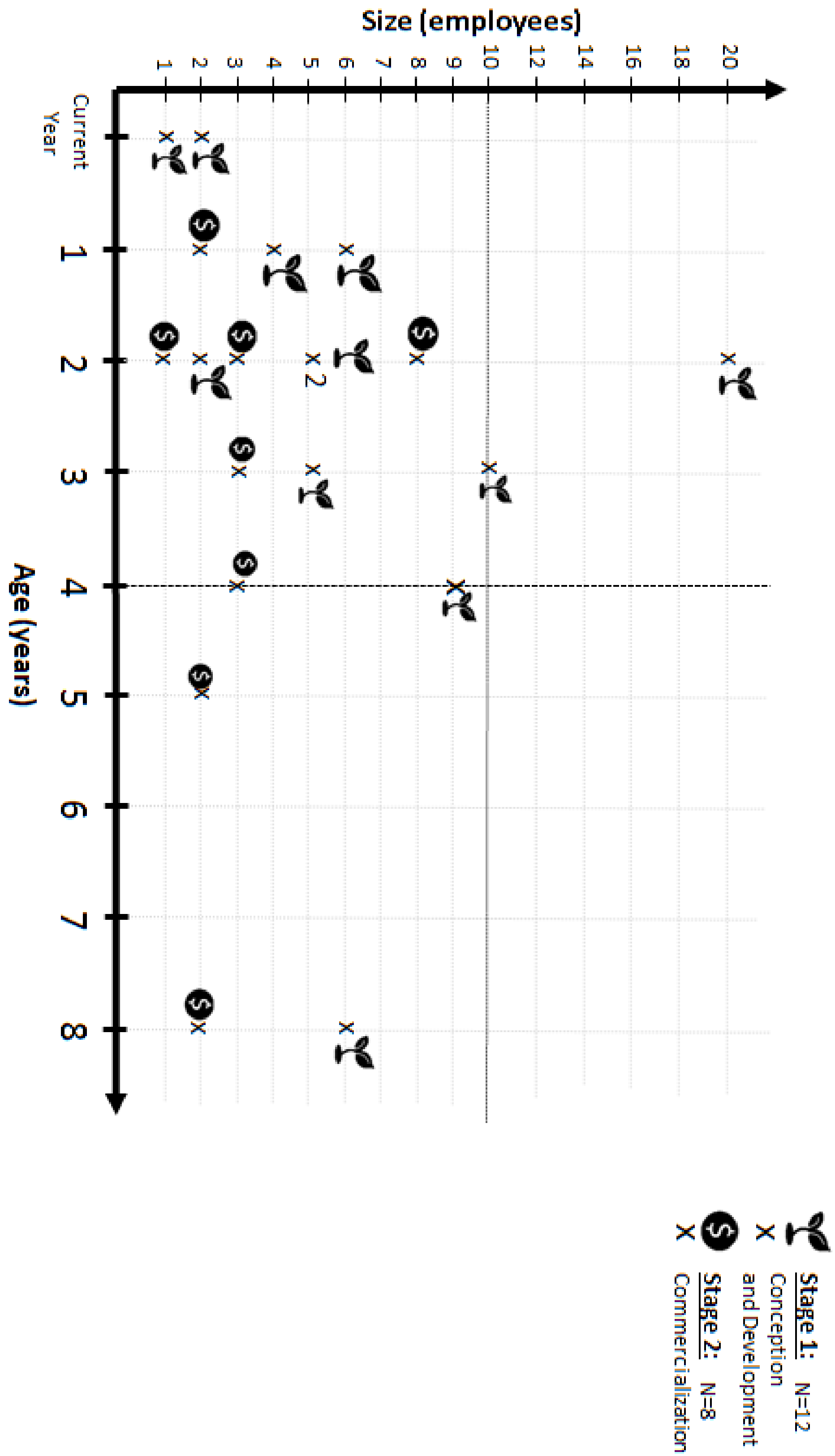
Appendix G: Summary of sample

Summary of Sample (N=20)	Growth Stage			
	Conception and Development		Commercialization	
	N=12		N=8	
	N	%	N	%
Incubation				
Incubated	10	83.33	4	50
Not Incubates	2	16.67	4	50
Year Founded				
2008	1	8.33	1	12.5
2011	-	-	1	12.5
2012	1	8.33	1	12.5
2013	2	16.67	1	12.5
2014	4	33.33	3	37.5
2015	2	16.67	1	12.5
2016	2	16.67	-	-
Number of Employees				
1	1	8.33	1	12.5
2	2	16.67	3	37.5
3	-	-	3	25
4	1	8.33	-	-
5	3	25	-	-
6	2	16.67	-	-
8	-	-	1	8.33
9	1	8.33	-	-
10	1	8.33	-	-
20	1	8.33	-	-
Sector				
B2B	6	50	2	25
B2C	2	16.67	3	37.5
B2B2C	4	33.33	3	37.5
Market Served				
National (Portugal)	4	33.33	3	37.5
International	3	25	3	37.5
Both	5	41.67	2	25
Product/Service offering				
Product	6	50	3	37.5
Service	6	50	5	62.5
Sources of finance				
Owner(s)	7	58.33	8	100
Friends and relatives	2	16.67	-	-
VC	5	41.67	2	25
Retained earnings	2	16.67	-	-
Banks and financial institutions	1	8.33	2	25

Appendix H: Sub-group of sample

Categorization according to growth stage, sector, market served, and product offering								
		Sector			Market served		Offering	
Growth Stage	**Count of (N=20)**	**B2B**	**B2C**	**B2B2C**	**Inter-national**	**National**	**Product**	**Service**
Conception and Development	1	x			x		x	
	2	x			x			x
	1	x				x	x	
	2	x				x		x
	1		x			x	x	
	1		x			x		x
	3			x		x	x	
	1			x		x	x	
Sum	12	6	2	4	3	9	7	5
Percentage of N=12	100%	50%	16.67%	33.33%	25%	75%	58.33%	41.67%
Commerciali-zation	1	x				x	x	
	1	x				x		x
	3		x			x		x
	2			x	x		x	
	1			x	x			x
Sum	8	2	3	3	3	5	3	5
Percentage of N=8	100%	25%	37.5%	37.5%	37.5%	62.5%	37.5%	62.5%
Total Sum	20	8	5	7	6	14	10	10
	20	20			20		20	
Percentage of total	100%	40%	25%	35%	30%	70%	50%	50%

Appendix I: Age and size to growth stages



Appendix J: Mean score of marketing challenges according to market(s) served

	National Market (n=6)	International Market (n=7)	Both Markets (n=7)
Low financial resources	5.5	3.57	4.86
Few human resources	5.5	4.14	4.57
Lack of critical skills	5	3.57	4.86
Limited market presence	5.5	4	4.43
Limited market power	4.17	3.71	4.86
Lack of experience	4.83	3.57	4.14
Lack of historical data	3.67	3.57	5
Lack of internal structures, processes, and routines	4	3.43	4.57
Difficulties establishing social interactions with suppliers	4.5	3.57	3.43
Lack of exchange relationships	4.5	3.29	3.29

Appendix K: Mean score of marketing variables recorded for each growth stage

Mean value table of score (1 to 7)		Growth stage (n=22)					
		Conception and Development (n=12)			Commercialization (n=8)		
Marketing Challenge variables		n=12	Incubated (n=10)	Not Incubated (n=2)	n=8	Incubated (n=4)	Not incubated (n=4)
S	Low financial resources	4.17	4.30	3.50	5.25	5.00	5.50
	Few human resources	4.42	4.30	5.00	5.13	4.50	5.75
	Lack of critical/important skills	4.25	4.40	3.50	4.75	4.75	4.75
	Limited market presence	4.08	4.30	3.00	5.38	5.75	5.00
	Limited market power	4.00	3.40	4.50	4.63	5.00	4.25
N	Lack of experience	3.92	4.00	3.50	4.60	4.25	4.75
	Lack of historical data	4.33	4.20	-	3.75	4.50	3.00
	Lack of internal structures, processes, and routines	4.17	4.10	4.50	3.75	3.50	4.00
	Lack of social interactions with suppliers/buyers	3.42	3.60	2.50	4.38	4.25	4.50
	Lack of exchange relationship	3.33	3.40	-	4.13	4.25	-
Average mean:		4.01	4.00	3.75	4.58	4.58	4.61

Appendix L: Mean score of marketing challenges in stage of growth in relation to amount of finance sources

Mean score of Marketing Challenges in Stages of Growth in relation to amount of finance sources

		Growth Stage			
		Conception and Development		Commercialization	
	Amount of finance sources	N	Mean	N	Mean
Low financial resources	One type of finance	8	4.38	4	5.75
	Two types of finance	3	2.67	4	4.75
	Three types of finance	1	7.00		
Few human resources allocated	One type of finance	8	4.63	4	6.50
	Two types of finance	3	3.00	4	3.75
	Three types of finance	1	7.00		
Lack of critical/important skills	One type of finance	8	4.38	4	6.00
	Two types of finance	3	3.00	4	3.50
	Three types of finance	1	7.00		
Limited market presence	One type of finance	8	4.13	4	5.00
	Two types of finance	3	3.00	4	5.75
	Three types of finance	1	7.00		
Limited market/monopoly power	One type of finance	8	3.75	4	4.00
	Two types of finance	3	3.67	4	5.25
	Three types of finance	1	7.00		
Lack of experience	One type of finance	8	4.00	4	5.25
	Two types of finance	3	2.67	4	3.75
	Three types of finance	1	7.00		
Lack of historical data	One type of finance	8	4.38	4	3.50
	Two types of finance	3	3.33	4	4.00
	Three types of finance	1	7.00		
Lack of internal structures, processes, and/or routines	One type of finance	8	4.13	4	4.00
	Two types of finance	3	3.33	4	3.50
	Three types of finance	1	7.00		
Difficulties in establishing social interactions with suppliers and/or buyers	One type of finance	8	3.63	4	4.50
	Two types of finance	3	1.67	4	4.25
	Three types of finance	1	7.00		
Lack of exchange relationship with suppliers	One type of finance	8	3.50	4	4.25
	Two types of finance	3	1.67	4	4.00
	Three types of finance	1	7.00		